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By Walter D. Bieberbach, M.D., Worcester, Mass.

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Original Articles

ACUTE LOBAR PNEUMONIA.*

BY F. C. SHATTUCK, M.D., BOSTON,
AND
C. H. LAWRENCE, M.D., BOSTON.

IN 1889 Coolidge and Townsend published an analysis of 1000 consecutive cases of lobar pneumonia, comprising all those treated at the Massachusetts General Hospital, from 1822 to that date. This paper presents an analysis of all cases of lobar pneumonia treated at the same hospital from 1889 to 1917, and a comparison of statistics with those obtained from the earlier material.

Our series, as compared with Coolidge and Townsend's, may be said to represent the results of the new régime in medicine as contrasted with the old. Until near the end of the period covered by the former paper, treatment was heroic, and the fresh air and cold air methods had not been introduced. Living conditions, especially those influencing the respiratory tract, were extremely different—crowded trolley cars, factories and tenements; steam heat and poor ventilation, were not the prominent factors in the spread of respiratory infections that they have since become.

Even the nationality of the hospital class has changed markedly since 1889. Immigration had not then reached the great heights it attained prior to the outbreak of the present war, nor were so many different nationalities represented by the incoming aliens.

It is our purpose, in this paper, to determine what the effect of all these changes has been upon pneumonia as seen at the Massachusetts General Hospital, by comparing our findings with those of Townsend and Coolidge, and to bring their work down to the present time.

From the hospital records for the twenty-eight years between the dates mentioned above, we have collected 3,291 cases of lobar pneumonia, while in the sixty-seven years covered by the other paper the total was exactly one thousand cases. These figures immediately suggest that pneumonia is actually increasing in in-

TABLE I.

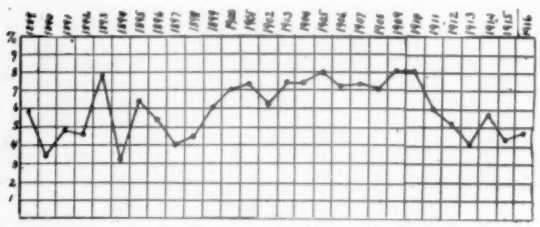
Year	Number of Medical Patients	Cases of Pneumonia Total	Died
1889	1310	76	22
1890	1334	48	15
1891	1171	57	18
1892	1288	57	20
1893	1180	92	34
1894	1261	42	11
1895	1299	84	30
1896	1306	97	24
1897	1443	86	12
1898	2000	91	17
1899	1908	111	30
1900	1812	114	31
1901	1711	127	28
1902	1580	110	20
1903	1789	130	37
1904	1986	181	48
1905	1997	160	34
1906	1919	139	23
1907	2021	180	27
1908	1908	136	39
1909	2089	166	40
1910	2189	176	54
1911	2460	148	38
1912	2898	141	42
1913	2580	107	29
1914	2623	146	39
1915	2795	121	27
1916	2674	126	31

* A sequel to the paper published by Coolidge and Townsend in 1889, and based on the cases of the Massachusetts General Hospital from 1889 to 1917.

cidence, but it must be remembered that the total number of medical cases admitted to the hospital, and its capacity have greatly increased. The preceding table shows the number of medical cases admitted to the hospital each year, the number of cases of pneumonia admitted each year, and the number of deaths among the latter during the past twenty-eight years.

The ratio of pneumonia cases to total medical cases is shown graphically in Chart I.

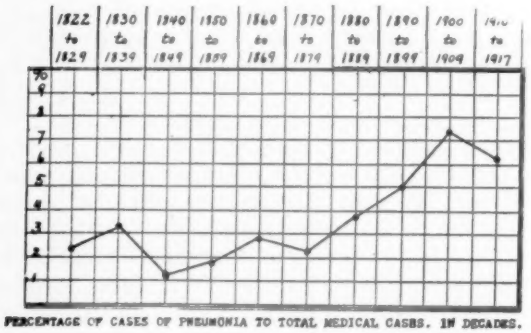
CHART I.



Percentage of cases of Pneumonia to total Medical Cases. By Years.

A study of this chart indicates that there has been no very marked change in the yearly incidence of pneumonia, and shows further, that the number of cases in any one year is subject to marked fluctuation. From 1900 to 1910 the average number of cases was higher than in the previous decade; in the seven years since 1910,

CHART II.



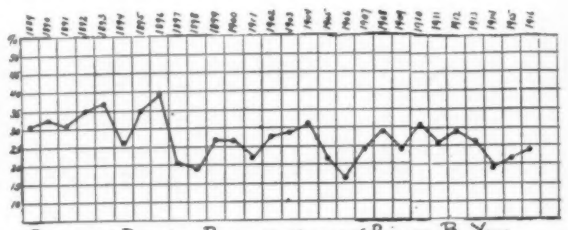
PERCENTAGE OF CASES OF PNEUMONIA TO TOTAL MEDICAL CASES. IN DECADES.

the average number has again fallen. Reference to Chart II, however, indicates that there has been an actual increase in the number of cases of pneumonia, as compared to the number of total medical cases, during the past five decades. In the 1870-1879 period the ratio was 2+, which was not materially different from the preceding periods. Thence it rose steadily, reaching the figure of 7+ between 1900 and 1909, and falling only to 6+ during the last seven years.

It is possible that a fraction of this increase in the incidence of pneumonia, may be due to an increased use of the hospital for the treatment of that disease as compared with others. The percentage of tenement dwellers is constantly increasing, and pneumonia is a disease not advantageously treated in the crowded quarters from which the majority of the hospital patients come. Further, that class is gradually becoming less averse to going to a hospital, so that it seems possible that an increasing percentage of pneumonia, as compared with other medical diseases, is being sent to the hospital for treatment. It does not seem probable, however, that this is enough to account for the whole increase mentioned above. Nor can it be laid to increased efficiency in diagnosis. Lobar pneumonia is usually not difficult to recognize, and was probably diagnosed as accurately in 1870 as it is today. It must be concluded, therefore, that there is a definite, though not remarkable, increase in the disease, for which no definite explanation appears. Changed conditions of housing, and overcrowded stores, workshops and street cars are probably contributing factors.

Of even greater interest is the question of mortality. Chart III gives the percentage of mortality from pneumonia by years, from 1889 to

CHART III.



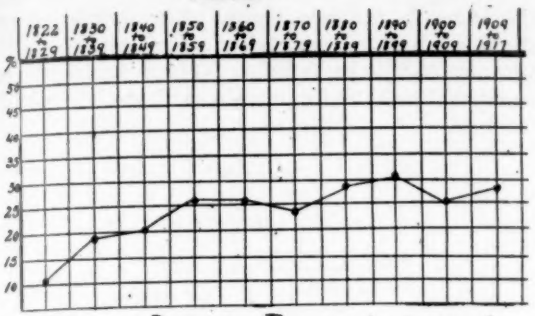
Percentage of Deaths from Pneumonia to all cases of Pneumonia. By Years

1917. It will be seen that there are marked variations in the yearly mortality rate, the highest being almost 40% in 1896, the lowest about 16% in 1906. In general, the trend is slightly downward—at no time during the past five years has the rate reached a point as high as was maintained during the first five years of the period under consideration. During the past five years, however, the hospital has opened a special medical department for children, with a resultant increase in the number of cases of pneumonia during the period of life when the mortality is low, and this factor must be considered in accounting for the general decrease in mortality during that time.

If the yearly mortality rates are collected by decades, and the results thus obtained compared with those given in Coolidge and Townsend's figures for the period 1822 to 1889, it will be seen that there has been a fairly steady increase in the mortality rate from pneumonia during the past ninety-five years. The rise, however, tends to diminish as time goes on.

Coolidge and Townsend noted this increase from decade to decade in 1889, and in an attempt to explain it, analyzed each case, noting the age, sex, race, previous health, temperance or intemperance in the use of alcohol, and also the presence or absence of complications. They further noted the month of the year in which each case occurred, the site of the lesion in the

Chart III

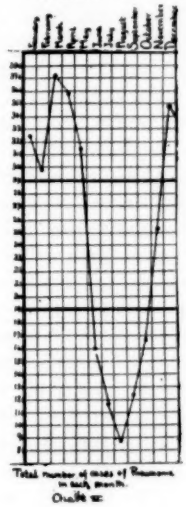


Percentage of Deaths from Pneumonia to all cases of Pneumonia by Decades.

lung, and the duration of fever till death or recovery.

A similar analysis of this series of cases has been made, for the purpose of explaining, if possible, differences in the two groups. Each factor will be considered in the same order as that used by Coolidge and Townsend. Chart V gives the total number of cases of pneumonia in each month during the years 1889-1916 inclusive.

CHART V.



There is no significant difference between the curve shown here and that plotted by the previous writers. In their chart, the highest point was reached in April instead of March, and the lowest in July instead of August, but the differences in each case are insignificant. It is our experience, as it was theirs, that the percentage of mortality by months is too irregular to be of any value in explaining the general mortality.

The site of lung involvement shows no particular change during the past ninety-five years. Our table contains combinations of lobes not mentioned by Coolidge and Townsend, such as right upper and middle, and right lower and middle lobes, and for these we are largely beholden to the roentgen ray. But the relation of right to left sided involvement, and the percentage of cases in which both lungs were involved, show similar figures. Our figures for relative frequency of right and left sided involvement are: right, 56.2%; left, 36.4%. Their corresponding figures are: right, 63.9%; left, 34.8%. Our figures show a slightly diminished incidence of double pneumonia, but the difference is only 4.3%.

TABLE II.

Distribution of Lung Involvement in 942 Cases

	Number of Cases	% of Total	Died	Mortality
Left lower lobe	372	39.5	82	26.6 %
Right lower lobe	338	36.0	68	20.0 "
Right upper lobe	111	11.7	27	24.3 "
Both lungs	69	7.4	43	62.3 "
Entire right lung	69	7.4	26	37.6 "
Right lower and middle lobes	52	5.6	17	32.6 "
Left upper lobe	35	3.7	12	34.2 "
Entire left lung	32	3.3	17	53.1 "
Right middle lobe	31	3.2	5	16.1 "
Right upper and middle lobes	19	2.0	7	36.8 "
Right upper and lower lobes	13	1.3	7	53.8 "
Total cases right sided involvement	530	56.2	127	23.6 "
Total cases left sided involvement	343	36.4	87	25.3 "

Mortality, as affected by the site of the lesion, shows but little difference in the two series. The mortality for involvement of the right side is slightly greater in our series than in theirs.

Although the site of lung involvement is no aid in explaining changing mortality, it presents two interesting points for consideration. First, the right side is involved twenty per cent. more often than the left. That this may be due to anatomical factors is suggested by the facts that the right lung is also more frequently involved in tuberculosis, and that effusions into the pleural cavity are more often right than left sided. The difference in blood and lymph circulation to the two sides perhaps accounts for the effusions, while the straighter right bronchus may make infection of the right lung easier than the left.

It is likewise interesting that though the right lung is so much more frequently involved, the death rate for the two sides is practically the same. The reasons for this seem more apparent. Involvement of the left lung imposes a greater mechanical embarrassment upon the heart by reason of the solidification so near it. Moreover, analysis of cases collected during the past five years shows that pericarditis, a complication with high mortality, occurs much more frequently in left than right sided pneumonia. In our series, 70% of the pericarditis was associated with left sided lesions.

The time at which death is most likely to occur during the disease has varied little since 1822. Coolidge and Townsend found that more deaths occurred during the eighth day than any other; in our series the seventh showed the highest figure, but difference between that and the eighth is slight and is insignificant when the difficulty in many cases of accurately determining the onset of the disease is considered.

The duration of fever in the cases that recovered showed the same variation, as may be seen from the table. Again the differences are insignificant. Termination by lysis or crisis was noted in 266 of our cases. Of these 192 ended by crisis, 74 by lysis. Coolidge and Townsend's

TABLE III.
Day of Death.

	1889-1917		1822-1889.	
	No. of Cases	Percent	No. of Cases	Percent
1st day	1	0.4	0	0
2nd "	2	0.8	0	0
3rd "	5	2.0	7	3
4th "	15	6.0	7	3
5th "	25	10.0	19	7
6th "	27	10.8	14	6
7th "	45	18.0	19	7
8th "	25	10.0	31	13
9th "	24	9.6	26	11
10th "	13	5.2	22	9
11th "	20	8.0	17	7
12th "	12	4.8	10	4
13th "	2	0.8	7	3
14th "	1	0.4	9	4
3rd week	17	6.8	23	9
4th week	6	2.4	7	3
5th week	1	0.4	5	2

figures for 212 cases were: Crisis 128, lysis 84. No definite conclusion can be drawn from these small series.

TABLE IV.

	Duration of Fever.			
	1889-1917.		1822-1889	
	No. of Cases	Percent.	No. of Cases	Percent
2 days	0	0		
3 "	4	0.7		
4 "	8	1.4	15	2.3
5 "	36	6.3	36	5.5
6 "	57	11.0	55	8.4
7 "	93	16.0	176	17.7
8 "	89	17.3	119	18.2
9 "	55	10.7	86	13.4
10 "	50	9.7	70	12.0
11 "	39	7.7	46	7.0
12 "	23	4.4	29	4.4
13 "	21	4.0	19	2.9
14 "	11	2.1	26	3.9
15 "	5	0.9	12	1.9
16 "	3	0.5	5	0.7
17 "	4	0.7	5	0.7
18 "	5	0.9	3	0.5
19 "	1	0.1	2	0.3
20 "	4	0.7	3	0.4
21 "	3	0.5		0.5
OVER 21 "	13	2.5		1.9

Coolidge & Townsend.

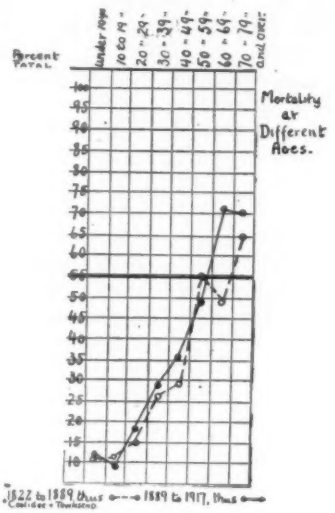
An analysis as regards relative incidence in males and females, shows that the former are much more prone to the disease. Nearly 68% of our cases were in males. In the former series, 72% of all cases occurred in men, and this ratio seems to hold in British private practice. The greater exposure of males to cold, wet, and extreme fatigue, their greater tendency to alcoholic excess and the greater frequency with which men are sent to the hospital, would account for the difference.

TABLE V.

	Men.			Women.		
	No. of Cases	Died	Mortal %	No. of Cases	Died	Mortal %
May 1, 1889 to Jan 1, 1900	576	181	31.4	188	58	30.1
Jan 1, 1900 to Jan. 1, 1910	938	238	25.3	449	109	24.2
Jan. 1, 1910 to Jan. 1, 1917	538	149	27.6	241	66	28.2
Total May. 1, 1889 to Jan. 1, 1917,	2052	627.6%	631	30.7	878-68.8%	282	28.8

Coolidge and Townsend found the mortality the same in the two sexes. Our figures show a slightly higher mortality for males—30.7% against 26.8% in females. Here again alcohol, and perhaps arteriosclerosis, will explain the difference.

CHART VI.



The factor of age in determining the mortality from pneumonia is more important than any other. As shown by Chart VI, the mortality, after the first ten years, increases markedly with each decade up to the seventh, when it becomes about stationary. In our own series, the mortality is slightly higher in the first decade than the second. In the cases from 1822 to 1889 the opposite was the case. This is probably due to the increased admission to the hospital of children of the poor, among whom general nutrition is not good. Coolidge and Townsend's figures are based on ten cases, of which one died. Our series comprises 476 cases, showing the great relative increase in patients under ten. Of those who died in the children's medical department (these figures are based on 60 cases collected since that department opened) 88% were under one year old, an additional 8.7% were poorly nourished. Subtracting these cases we should find the mortality for the first decade 3.3%, and the mortality rate would be a straight line from beginning to end.

Our figures agree with those of the previous writers until the sixth decade is reached. At this point, theirs fall abruptly, while ours continue upward. The authors of the previous paper explain the break in their line by the statement that 60% of their patients in that decade showed neither complication nor intemperance, and further state that a similar chart, based on 412 cases in their more recent years, did not show the break. It is to be concluded, then, that there is not a diminished mortality from pneumonia in the sixth decade, but the reverse. Indeed it will be seen that the increase in mortality is greater than for any other decade.

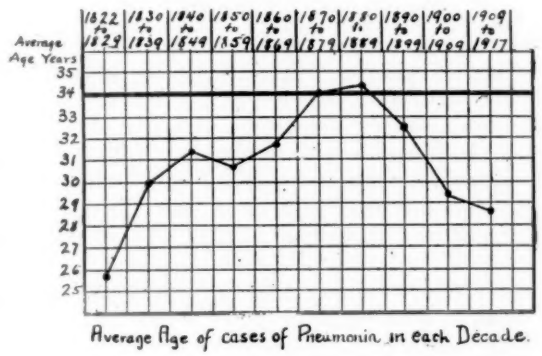
TABLE VI.

May 1 1889 to Jan. 1, 1917.

Age of Patient	No. Cases	% of Total No. Died	Mortal.%
Under 10 years	476	13.5	66 13.8
10 to 19 "	329	11.8	33 9.1
20 " 29 "	626	22.5	115 18.3
30 " 39 "	580	20.8	169 29.1
40 " 49 "	431	14.0	154 35.6
50 " 59 "	292	10.4	145 49.6
60 " 69 "	100	2.7	72 72.
Over 70 "	48	1.4	34 70.8
Total	2882		

Is there an explanation for this marked increase? We feel that it lies to some extent, at least, in the development of arteriosclerosis as a prominent factor in man's existence at about that time. It is true, of course, that arteriosclerosis is a process of insidious onset and gradual development, but it is equally true that its effects are most marked after sixty. To determine its effect upon the course of pneumonia, we analyzed the cases during the past five years. Ten cases of pneumonia were found which showed well marked arteriosclerosis, according to the records. Of these eight, or eighty per cent., died. It seemed fair to believe, therefore, that it is an important factor in the greatly increased mortality of the sixth decade; and in default of other explanation, the alleged increasing incidence of arteriosclerosis in the community may be advanced as one factor contributing to the increasing death rate from pneumonia. It is probably less important in hospital patients than in private practice.

CHART VII.



Average Age of cases of Pneumonia in each Decade.

Since age is so important a factor, our cases were plotted according to their average age, by years and by decades. No positive conclusions can be drawn from this chart. There has been a steady decline in the average age of patients admitted since 1889. This is partly due to the increasing number of children admitted. The table furnishes no explanation of the increasing death rate.

This conclusion is opposed to that of Coolidge and Townsend, who found an increasing age average from decade to decade, and who believed it an important factor in accounting for the increasing mortality.

The effect of previous health and temperance of the individual is noted in Table VII. The interesting conclusion to be drawn from this

TABLE VII.

Influence of Previous Health & Habit.

	No. of Cases	Died	Fatal Percent.
1. Delicate	144	55	38.0
2. Healthy & Intemperate	159	60	37.7
3. Healthy & Temperate	365	84	23.0
4. Healthy	161	32	19.8
5. Intemperate	55	29	52.7
Healthy (3+4)	526	116	22.0
Intemp. (2+5)	214	89	41.5

table is that intemperance in the use of alcohol increases the mortality among otherwise healthy individuals until it practically equals that among those of delicate health. That increasing intemperance cannot be advanced as an explanation of the increasing death rate, is shown by the fact that Coolidge and Townsend found 109 intemperate patients in their series, while in ours, comprising three times as many individuals, only 214 were noted. The evidence afforded by these figures is, of course, not very definite, since the possibility of error is great. There is, however, no ground for believing alcoholism to be on the increase among the patients studied. Our mortality figures as influenced by previous health and temperance are essentially the same as those of Coolidge and Townsend.

TABLE VIII.

May 1, 1889 to Jan. 1, 1917.
Most Common Complications in 3187 Cases of Pneumonia in Order of Frequency.

Disease	No. Cases	% of Total Number	Died	Mortal.%
Empyema	100	3.1	29	29.0
Alcoholism	70	2.2	43	58.5
Acute Otitis Media	81	2.5	7	8.6
Acute Fibrinous Pericarditis	60	1.7	57	74
Pleurisy with Effusion	40	1.2	4	10
Pericarditis with Effusion	24	0.97	22	91.6
Typhoid Fever	22	0.66	14	63.6
Jaundice	33	1.0	18	54.5
Acute Arthritis	19	0.60	5	26.3
Acute Endocarditis	17	0.54	15	88.2
Abscess of Lung	12	0.40	7	58.3
Phlebitis	14	0.44	1	7.1
Dilatation of Heart	10	0.31	10	100.0
Pulmonary Tuberculosis	11	0.34	2	18.1
Meningitis	11	0.34	11	100.0
Post-febrile Insanity	5	0.20	0	0.0
Acute Nephritis	6	0.18	0	0.0
Pneumothorax	2	0.06	0	0.0
Pyopneumothorax	2	0.06	2	100.0
Grangrene of Lung	1	0.04	1	100.0
Subdiaphragmatic Abscess	1	0.04	0	0.0

	No. Cases.	Died	Mortal %
Total No. Cases (May 1, 1889 to Jan. 1, 1917)	3187	888	28.3
No. Cases with Complication, Acute and Chronic	698	299	43.4
Uncomplicated Cases	2489	534	21.6

21.7% of 3187 cases had complications, acute and chronic.

The frequency with which various complications of pneumonia occur, and their effect upon the outcome of the disease, is shown in Table VIII. The list does not comprise all complications found. For the sake of conciseness, those complications which had or might be expected to have no influence upon the course of the disease, have been omitted from the table. All complications, however, were used for purposes of obtaining the final figures.

It is extremely hard to compare our table with that compiled by Townsend and Coolidge. In their series of 1000 cases, empyema was noted six times, with a mortality of 50%. In our series of 3000 cases, empyema occurred 100 times with a mortality of 29%. Endocarditis, found 17 times in our series, is not mentioned in theirs. The total figures show, however, that 16.1% of their cases had complications, acute or chronic, against 21.7% in our series. Probably some at least of this increase must be ascribed to increased accuracy of the hospital records, as it is hard to believe that such complications as endocarditis, jaundice, and otitis media did not occur before 1889. The mortality in our series of complicated cases was 43.4%; in the former series, 36.6%. It would be unsafe, however, to ascribe to this factor the increased mortality from pneumonia, for refinements in diagnosis, both ante and post mortem, have undoubtedly swelled our list of complications, while the mortality rate for almost all the complications which can be compared in the two periods has diminished since 1889.

In 641 cases of pneumonia in the last five years of our series, forty-two, or 6.5%, had had previous attacks of the same illness. Of these, fourteen, or 33 1-3%, died. Thirty-six of the series had had one previous attack; ten of these died. Three had had two previous attacks; two of these died. Two patients had had three, and two, four previous attacks. There was no mortality in these two groups. None of these cases happened to be complicated, delicate, or alcoholic. It appears, therefore, that previous attacks of pneumonia slightly raise the mortality rate, but our series is too small to be more than suggestive.

TABLE IX.

May 1, 1889 to Jan. 1, 1917. (Inclusive).

		No. Cases.	Fatal.	% Fatal.
Americans (Includ. Canadians & Colored)		1810	426	23.4
Irish		499	173	34.6
Other Foreigners		779	170	21.8
Not Recorded		39	26	66.6
Included in "Other Foreigners"	English	99	28	28.1
	Italians	239	46	19.5
	Jews	211	40	18.9
	Germans	38	13	34.2
	Swede	40	10	25.0
	Scotch	22	5	22.7
	Canadians (born abroad)	156	45	29.1
	Colored	42	17	40.4
From May 1, 1900 to Jan. 1, 1917.				
Americans (Exclud. Canadians & Colored)		1035	249	24.

The influence or race upon mortality remains to be considered. In our series, 35.3% of the patients were born in the United States, and this class of patients showed a death rate of 24%. Seventeen per cent. were Irish, with a death rate of 34.6%. Fifty-one per cent. were classed as "other foreigners" with a mortality of 21.8%. In Coolidge and Townsend's series, 46.3% were Americans, with a mortality rate of 22%; 37.1% were Irish, with a mortality rate of 25%; 11.9% were classed as "other foreigners" with a mortality rate of 30%. Since 1889, therefore, the mortality rate among Americans has increased 2%, among the Irish 9.6%, and among "other foreigners" it has diminished 8.2%. The relative number of Irish admitted has diminished markedly, that of "other foreigners" has sharply increased. Among these latter in our series, the Italians and Jews were the most numerous, and had the lowest death rates—less than 19%. The former were almost all young, vigorous men. The low mortality among the Jews is probably another example of their racial resistance to pulmonary disease. The increase in the "other foreigners" group should be expected to lower the death rate, and may account somewhat for the drop noted during the last seven years in Chart III. Apparently, however, it has not made its influence felt upon the rate calculated by decades, though it may explain the slight fall noted during the past two such periods.

It is interesting to note the susceptibility of the Irish race to pneumonia as well as to tuberculosis. Malnutrition and alcohol would seem to be contributing factors. It may also be interesting to note the number of different races represented among "other foreigners," some twenty-five in all, and collected during the past five years, and from the pneumonia patients only.

TABLE X.

Nationalities Represented among Pneumonia Cases in Past Five Years.

Americans	Scotch	Danes
Canadians	Polish	S. Americans
Irish	Portugese	French
Russian Jews	Turkish	Norwegians
Italians	Austrian	West Indians
English	Finnish	Roumanians
Greeks	Swiss	Armenians
Germans	Syrians	New South Wales
Swedes		Total 26

To sum up the probable effects on the mortality rate of the factors thus far considered, it may be said that since 1889, the deaths from pneumonia have increased somewhat faster in males than females; that the age of the patient has practically the same effect now that it had then; that intemperance as a factor in the mortality has not increased among the patients in our series, and that the relative number of intemperates is smaller in our series than in Coolidge and Townsend's. The same is true of delicate cases, while the relative number of complicated cases has probably not increased actually to any great extent, though more complications are noted since 1889 than formerly.

The death rate by decades for all patients has shown practically no rise since 1889. During the past seven years there has been a slight decline, caused probably by the steadily increasing numbers of young foreigners among whom the death rate is low.

The increased death rate among the Irish and Americans may be due in part to alcohol, especially among the former, and in part to the more rapid vascular aging of the present day.

If age be as important as our tables indicate, and if "a man is as old as his arteries" then vascular degeneration, which is believed to be increasing at present, may account for the increased death rate from pneumonia in these latter decades, as compared with the first half of the previous century. The apparent arrest during the past twenty years of the upward trend of the mortality curve may be due to treatment, or can be explained by the change in the make-up of population.

CONCLUSIONS.

1. In the four thousand odd cases of lobar pneumonia treated at the Massachusetts General Hospital, from 1822 to 1917 (inclusive), the mortality has gradually increased from 10% in the first decade to 28% at the present time.
2. Since 1881 there has been no significant change in the death rate.
3. The number of cases classed as delicate or intemperate has been decreasing during the same period.
4. The apparent increase in complicated cases is probably due to increased accuracy of diagnosis and recording.
5. The relative number of foreign-born patients is increasing, the mortality among them diminishing.
6. The death rate among American-born patients has increased slightly, as has the mortality among men as compared to women. This may be due to a corresponding increase in vascular diseases during the period studied.
7. The mortality rate for pneumonia in the entire series has shown no permanent important change.
8. Treatment has done nothing toward diminishing the mortality from pneumonia in the past ninety-five years. Bleeding, purging, fresh air—the result has been the same. Of particular interest is the evidence offered by our figures upon the effect of alcohol. Its habitual use, during health, in more than moderate amounts, is shown to diminish the patient's chances of recovery. But the mortality rate among those patients who were given large amounts of alcohol during their illness, is no higher than among those given no alcohol and large amounts of fresh air. Our figures do not indicate that alcohol is harmful to those sick with pneumonia. They suggest that the effect of the drug varies with the conditions under which it is given, and that it is not poisonous to those who have high temperatures and are taking insufficient nourishment.
9. No change is to be expected in the results of treatment until a specific is discovered which will neutralize the toxins of the pneumococcus.
10. The results from the serum now in use are encouraging, but limited, and until its use becomes accepted, the treatment of pneumonia must be that best suited to the individual. No routine treatment has been justified by its results.

RECENT TREATMENT OF LOBAR PNEUMONIA.*

BY THOMAS F. LEEN, M.D., BOSTON,

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FROM a pathological standpoint of lobar pneumonia, we all are aware of its definite stages of pulmonary congestion, consolidation, and resolution, or some consequent local metastatic infection. As well clinically, we are familiar with its clean-cut, self-limited picture, ending in recovery or death, and that no longer do we consider it simply as a lung infection, no more than we do typhoid an infection of the intestine alone, but as a general constitutional disease, with local manifestations. But when we come to its treatment, which is only symptomatic and supportive, and difficult and doubtful, there we are halted for a cure. Why does one of our athletic, healthy young men die in a few days of the disease, and a weakling, physically, recover? We don't know how infection takes place, how the organisms are related to the lesions and symptoms, how the patient recovers, and what makes the possibility of recovery and cure. Some of these questions are slowly being solved on theoretical, biological, and experimental grounds, and the work already done experimentally and biologically by investigators, particularly at the Rockefeller Institute, headed by Cole, is the most illuminating, tangible, and progressive that has ever been given to physicians in this most important, infectious disease, where we have been practically helpless. We shall consider only the newer methods of treatment and the grounds on which they are based.

When I speak of lobar pneumonia, I mean pneumonia of one or more lobes, or a part of a lobe, where pneumococci are found in the lesions; for, as you know, occasionally the bacillus of influenza and the bacillus pneumoniae may be the cause of similar lesions as well. A question has arisen as to whether the diplococcus pneumoniae is the primary cause of the disease, for a diplococcus not differentiated from it is found in lobar pneumonia, and organisms with identical characteristics seem to be normal inhabitants of the mucous membrane of the throat and mouth, it being present in 226 out of 398 examined. But their association with the lesion and their frequent invasion of the blood show they play a strong part in the process and probably the most important in prognosis, just as streptococci do in smallpox and scarlatina, the natural infection being due to specific etiologic agents. Experimentally, Wadsworth in 1904, in a series of rabbits caused lobar pneumonia by pneumococci, and at present this view has been generally accepted.

On reviewing the history of the pneumococcus, we must remember that it is not, as for-

* Read before the Waltham Medical Club, December 6, 1917.

merly thought, to be one race or strain, but a species of many races. Kruse, in 1891, identified 84 different strains or races morphologically, culturally, and in virulence. The next important landmark so to speak, was the discovery by Schottmüller, ten years ago, of what he called the streptococcus mucosus, associated with lobar pneumonia, having as characteristics a very large capsule and certain biological features, one of which is the formation of a sticky, glutinous exudate. As it was more related to the pneumococcus than the streptococcus, it has been called the pneumococcus mucosus, causing a very severe and fatal pneumonia with a mortality from 45 to 66%. Apart from this particular strain, all pneumococci were thought to be generally the same until Neufeld and Händel of Germany, in 1912, first laid the foundation upon which all later work was done. They tested a so-called univalent serum against various races of pneumococci. In experiments on mice, it protected against 15 strains, and against other strains the serum had practically no effect. These atypical strains were not serum-fast, since the serum obtained during convalescence from one of the patients from whom one of these organisms had been isolated, protected mice against the homologous strain and also against one of the atypical strains, but did not protect against the typical strain. They then produced an immune serum against one of the atypical strains, to see whether all atypical strains could be affected by this immune serum, but found this not to be true. Later, they found the second immune serum which protected against only three of the atypical strains isolated by them, but failed to protect against three other strains. These latter three strains they further showed to be individual in their reactions, and not having access to many pneumonias to obtain cultures, they could not determine the frequency of the atypical types, nor study the biological groupings of the organisms.

The report of this important work was the stimulating influence of the Rockefeller Institute to study all races isolated from lobar pneumonia; and Dochez and Gillespie immunized rabbits to each race, studying their immunity reactions. They found a number of the races were similar and that all this group agglutinated by the serum obtained by the immunization of animals to one of them, and such a serum protected mice from infection with any one of the group. A second smaller series was also found to have common immunological characteristics, but these characters were entirely distinct and different from those of the first group. Finally, a considerable number of races were found with no common immunological features, each race appearing distinct. These facts corroborated the work of Neufeld abroad but were based on more elaborate and extensive research.

To identify these groups or types, the first described was called Type, or Group I; the second smaller series, Type II, the pneumococcus mucosus of Schottmüller, Type III; and the group of pneumococci, having no common immunological characteristics,—a heterogeneous group,—Type IV. Under Type II, further subdivision of a few strains have been very recently made: IIa, IIb, IIx, with the details of which I shall not take up your time. Therefore, the etiological agents in all cases of pneumonia are not the same, for there are many races or kinds of pneumococcus causing the disease, types of a single species. Similar examples we see in typhoid fever, in the differentiation of paratyphoid A and B, culturally and immunologically different, the differentiation of meningococci, and within the year, the typhoid bacillus has been differentiated into more strains, accounting for the non-protection of inoculated patients with typhoid vaccine of one strain, the patient coming down with typhoid fever from another strain. Already is it well known that bacillary dysentery is not due to one strain, but to any one of four,—the Shiga, Flexner, Strong, or Y, and only the anti-serum of that particular infecting strain can cure the patient. Recently, Noguchi in his work on the Treponema pallidum of syphilis has differentiated several strains of that organism. The clinical manifestations of infection by these different groups of pneumococci are not identical, certainly as regards severity, as shown by mortality statistics.

MORTALITY.

	ROCKEFELLER (COLE)			PENN. HOSP. (LEWIS)
Cases due to group or type	Cases	Deaths	Per Cent.	95 cases
I.	57		38%	33%
II.	44		30%	27%
III.	17		11%	3%
IV.	32		21%	36%

INCIDENCE OF THE DISEASE.

	ROCKEFELLER			PENN. HOSP.
Cases due to group or type	Cases	Deaths	Per Cent.	Per Cent.
I.	28	7	25%	29%
II.	25	9	36%	27%
III. (Pneumococcus mucosus) ...	17	8	47%	67%
IV. (Heterogeneous)	33	2	6%	11%
Total No. of cases	103			

STILLMAN.

Past five years at Rockefeller, 454 cases of lobar pneumonia.

Cases due to group or type	Cases	Per Cent.
I.	151	33.26%
II.	133	29.29%
IIa.	6	1.32%
IIb.	4	0.88%
IIx.	9	1.98%
III. (Pneumococcus mucosus) ...	59	12.99%
IV. (Heterogeneous)	92	20.26%

From a prognostic standpoint, the determination of type alone is of considerable importance. Type III is the least frequent but most

severe, with a mortality from 45 to 66%. Types I and II are less severe but most frequent, with a mortality of about 30%, and Type IV very mild and fairly frequent in incidence, with a mortality around 15%.

Perhaps what I have said already, you may consider is only for the bacteriologist and of no importance to us physicians and our patients. Certainly in treatment of patients with pneumonia, all possible means of stimulation and all known methods for increasing the natural powers of resistance by non-specific measures should be employed, but the progress made in specific serological work is what I want to draw particularly to your attention from the curative standpoint, and a knowledge of it and its application to our cases determines a lessening of our high mortality in lobar pneumonia. From present knowledge, it would appear that the growth of bacteria in the blood is the most serious part of the pneumonic process, and it seems that this, at least, is influenced by the appearance of circulating antibacterial substances. Since 1891, immune serum was made, but proved very inefficient, so much so that in 1904 Anders collected 535 cases of pneumonia treated with serum, and he reported there was no justification for its use. Why it failed we know now, since a pneumococcus immune serum is effective only against the type of organism used in the process of immunization. If, for instance, immunization is carried out with organisms of Type I, judging from experimental studies, it will have no effect on any infection to one of the other types of pneumococci. The same is referable to a serum produced by the injection of pneumococci of Type II. If immunization is carried out with one of the organisms of Type IV, the serum can have no effect on any infection except that due to the same race. In other words, the serum must be univalent and not polyvalent.

To render a serum useful in any type of pneumonia, it is necessary to produce one with high protective power against the type of organism concerned, to have a satisfactory method of standardization of such serum, and to have a method for quickly determining the type of organism in each case. Sera of high protective power against organisms of Types I and II have been produced by the immunization of horses by properly spaced doses of living pneumococci. No satisfactory protective serum for Type III has been made, and the use of one in this type of infection is without justification. As Type IV is composed of strains each immunologically different from the other, no one serum can be made for all the members of this group, but each organism can produce an active immune serum for its particular strain. For the standardization of the immune serum mice have been used, and a method for the rapid determination of the type of organism has been employed. This is important to clinicians and must be carried out in every case to determine whether the infecting organism is amenable to immune serum. A few sputa are collected in a clean receiver, or if no sputum may be had, a vein is tapped, or the area of consolidation is punctured and the blood or sputum, after being emulsified by the bacteriologist with sterile salt solution or bouillon, is injected intraperitoneally in a mouse, it being an animal very susceptible to pneumococci. Four or five hours later, the peritoneal cavity is washed out with salt solution and the exudate cells are removed by slow centrifugalizing, and the bacteria from the supernatant fluid by rapid centrifugalization. The bacteria are washed in salt solution, and this salt solution emulsion is tested for its agglutinative power by adding equal amounts of it and Type I serum, and likewise of it and Type II serum. If within one-half hour the organisms in the first mixture agglutinate, it is a strain of Type I, and its immune serum given intravenously; or if it is agglutinated by Type II serum, then it belongs to that type and No. II serum must be given. Therefore, the type must always be determined and immune serum in amounts of 80 to 100 cc. given intravenously every 6 to 8 hours till the patient's condition changes.

Generally, after giving the injections, a reaction occurs, the temperature usually rising and then falling, except in fatal cases, not necessarily remaining low. It shortens the course of disease, the patient feels better, and intoxication lessens. The serum causes increased agglutinins in the blood, which may be demonstrated three minutes after injection. Where the administration of subsequent doses has not led to a prompt increase of agglutinins in the blood above the previous level, the fall in temperature has been longer delayed, and more serum has been required.

In fatal cases there is an increased invasion of blood by pneumococci and extension of the local lesion, and recently it has been determined that large amounts of soluble inhibiting substances in the blood preventing the action of immune serum and being so large in amount, that no practical amount of immune substances can neutralize them. In such cases the serum may prolong life, but the infection and intoxication may be so great at the start that although the infection may be kept down by the serum, the intoxication cannot be removed, the patient succumbing to this. Hence the importance of giving very large doses of immune serum at the beginning is apparent.

It is impossible to produce a serum against Type II pneumococci to be as active in the test tube, or in the living, as is the serum against Type I organisms, for the horse serum against Type I infection is of such a strength that 0.2 c.cm. will regularly protect a mouse against 0.1 c.cm. of virulent culture, and it has been impossible to produce an immune Type II serum of any greater activity than that 0.2 c.cm. will protect the mouse against 0.01 c.cm. Moreover, the active Type I serum usually causes agglut-

ination of homologous organisms in dilutions of 1-400 or over; the Type II serum usually causes agglutination in dilutions no greater than 1-200.

During infection not only must efficient immune substances be added to bring about a concentration sufficient to sensitize all the bacteria, produce their agglutination, opsonification, etc.; but in addition there must be a sufficient amount administered to neutralize any soluble substances present in the serum, which has the property of neutralizing and fixing the immune substances. The nature of these fixing substances is not positively known. But Dochez and Avery's demonstration, in pointing out the production of precipitable substances in the blood and urine of infected patients and animals, makes it possible. They are responsible for the fixation phenomena. This substance is a precipitin, which early in the growth of the pneumococcus is formed as a readily soluble substance, diffusing into the culture medium; and in human and animal infections, is present in the circulating blood, whence it passes through the kidneys into the urine. It is not yet certain that this substance is responsible for the intoxication that accompanies lobar pneumonia.

The precipitin reaction may be demonstrated in the urine of infected animals or pneumonic patients, even as early as 12 hours after the initial chill, whence a marked precipate occurs by mixing it with the serum corresponding in type with the organism with which the animal or patient was infected. This specific substance is not destroyed by boiling, and is of protein nature. This reaction is found in pleural fluids, pericardial exudates, and the spinal fluid of pneumococcus meningitis. The amount of precipitin substance in the urine seems to be a measure of the severity of the infection, for the mortality is high when it is present, and most recover when absent. This specific precipitin test in the urine is of considerable prognostic value. These observers, furthermore, believe that this substance bears some relationship to the property of capsule development; for Type III the mucosus organism possessing the largest capsule forming most of this substance; Type II, which has smaller capsules, producing less; and Type I, having small capsules, still less, and very little if any in Type IV.

If the patient is treated early, before large amounts of the fixing substance are present, a moderate amount of serum may be sufficient, even though the grade of blood infection be considerable. On the other hand, if the pneumonia has continued for a considerable time and large amounts of the soluble fixing substance are present in the blood, the amount of serum may be very large; and to repeat, though the infection may be checked, the resulting intoxication destroys the patient. Hence you see how important it is to treat very actively at the start in order to neutralize all these substances and entirely and immediately to overcome the disease.

As a result, Cole advises the treating of all patients with Type I infection with large initial doses and to repeat every six to eight hours as long as may be necessary. It is possible that the Type II serum is less effective than No. I serum, not only because its concentration of immune bodies is less than Type I serum, but also because the power of pneumococci of this type to produce fixing substances is more highly developed than is that of pneumococci of Type I.

As after the injection of any foreign serum, there results more or less anaphylaxis, the usual serum sickness, in 10 or 12 days, and it may be acute even after one small dose in susceptible persons, causing suffusion of the face, respiratory difficulty, and vomiting. If this occurs while the serum is being slowly administered, it should be discontinued and in 4 to 5 hours a somewhat larger dose tried again. Progress is being made on concentration of the sera, the immune bodies being contained in a part of the globulin fraction of the protein. As a result, smaller doses of horse serum will be given and less serum sickness will occur. The random employment of immune serum and vaccines is to be frowned on, since the future usefulness of antipneumococcus serum depends upon our careful determination of its use in proper cases with organisms homologous to the serum used. Suffice it to say, that the treatment of pneumonia due to Type I organisms by the homologous serums has reduced the mortality of this type of infection from 30% to 8%. This speaks well for the future, and Cole suggests that a polyvalent serum for all pneumonias is possible and will be produced later.

Is there a medicine that acts specifically in the disease as salvarsan does in syphilis, and quinine in malaria? Morgenroth, and his associates, in 1911, while working on various organic quinines discovered that one of them, ethylhydrocuprein or optochin, exerted some protective and curative action on mice infected with pneumococci and that in the test tube, in weak solutions, these organisms were destroyed. With this as a basis, much progress has been made since grouping of the pneumococci was determined. Moore and Chesney have reported 32 cases treated at the Rockefeller Hospital in conjunction with allied experimental work. To cure pneumonia or pneumococcal septicaemia with this drug, there must be produced a pneumococcidal action in the blood serum, to maintain it as constantly as possible over a period of time sufficiently long to insure the destruction of all the infecting pneumococci, and the concentration of the drug in the body to be harmless to any part of it. These have been pretty well fulfilled. It has a positive bactericidal action on the organisms in the blood and should be given as early as possible in the disease on account of the fewer organisms in the blood. But those in the lung lesions apparently are not af-

fected, as they are mechanically protected by the exudate from the action of the blood. The doses must be large at first to prevent the organisms from acquiring a condition of resistance or "fastness" to the drug which, if occurring, makes later large doses of no avail. This has been shown experimentally to be so, for cultures, by slowly increasing doses for 10 to 12 days, could grow in comparatively high concentration from the drug. The best method of administration is by the mouth, as doses so small as to have little bactericidal action when given intravenously, cause serious toxic symptoms, and subcutaneous doses cause much discomfort by painful infiltration of the tissues. Optochin hydrochloride (Merck) given by mouth in capsules is absorbed so quickly that there is a rapid appearance of the bactericidal action in the serum. For the average person of 135 pounds (62 kgm.), 1.5 grams (25 grains) should be given in 24 hours to cause bactericidal action; or at least 0.024 gm. (grain 1-3) per kilo of body weight per 24 hours. The first day an initial dose 0.45 gm. (grains 7½), and every three-hour intervals thereafter 0.15 (grains 2½), for seven doses; and subsequent days, ten doses of 0.15 gm., each at 2½ hour intervals. Camphor has been shown to diminish the curative effect of optochin and should not be used. No particular diet is necessary. It is a white powder, soluble in distilled water but not in salt solution. Experimentally it has been found that 3½ hours after giving 0.5 gm. of the drug, it is possible to detect the specific inhibitory action in the patient's blood; it is absorbed faster than it is eliminated in the urine and there results a positive balance in the body. Fluid aspirated after death from a pericardial sac was found to be sterile and to have a bactericidal action on pneumococci, showing it passes through serous surfaces. On account of lack of knowledge of its proper dosage, some serious toxic symptoms were reported, but recently they have been minimized to a great degree. They are principally referable to the eye and ear. Vomiting has been reported, due probably to the extremely bitter taste. Ringing and roaring sounds in the ears, and partial deafness, transient in type, disappear when the drug is stopped. The eye symptoms are more serious, and out of 787 treated cases which have been reported, 4½% have had transient amblyopia or amaurosis. Oliver reports one case of permanent, almost complete blindness, the patient receiving 5 grains (0.3 gm.) every three hours, the total amount being 7.7 gm., greater doses than that usually given. In all other reported eye changes, discontinuance of the drug cleared up the symptoms. Dilatation of the pupils suggesting some amblyopia, should be watched for, and it is important that ophthalmoscopic examination be done often to determine any eye changes, and if any found, the drug be diminished or discontinued. The more the daily dose is subdivided, the less frequent are the visual disturbances.

Leschke and others report favorable results from optochin treatment in pneumococcal septicemia. At Rockefeller there was no considerable shortening of duration of the disease under its use. In 787 reported cases treated with the drug, there was a mortality of 12.96%, and in Moore and Chesney's corrected series 19%, where the mortality expected was calculated to be 33%. In all these cases empyema occurred in 1.9%. These figures are encouraging, and even if the drug can't destroy all the pneumococci in the infected area when present in the blood in a concentration sufficient to produce bactericidal action in the serum *in vitro*, nevertheless, if it can prevent a spread of the disease process to healthy lung and prevent septicemia, or metastatic complication, its use may be helpful, as the involvement of hitherto healthy lung constitutes great danger to the patient.

The usage of optochin and anti-pneumococcus serum simultaneously in Group II pneumonias, since the serum alone was disappointing, has been shown by Moore to give markedly increased protective value to the serum. This would seem to suggest that in the specific treatment of pneumonia, perhaps even more favorable results may be expected from the use of optochin and the type of homologous anti-serum, than by either of these remedies separately. Time and experience may make us change the dosage and value of this drug, but to repeat the statistics as quoted, of 787 cases of lobar pneumonia treated with it, with a mortality of 12.96%, with an expected mortality of 30%, surely makes it worth while for our study and consideration. Furthermore, Cole's recent report of 72 consecutive cases of Group I pneumonia treated with a corresponding serum intravenously, with a mortality of 8.3%, whereas among untreated patients in this group the death rate was 25%, bodes well for the future cure of this most important infection. There are many other questions in pneumonia which could be discussed from recent literature with great profit, but if I have stimulated you to study and consider further anti-pneumococcus serum and optochin hydrochloride, this little talk will not be in vain.

RECRUITING NOTES

By Harold W. Dana, Boston,
Captain, M.R.C., U.S.A.

It is not my intention to offer these few suggestions as necessarily representing anything new in medicine, and certainly to most trained military physicians, most of the things here discussed may seem to be a matter of course. Personally, I am not a surgeon nor an orthopedist, so that what I have to say in these fields will not be of interest to specialists along those lines. What I have to present are the things which have impressed me as a newcomer into the service, during six months' work as an examiner

of recruits for the Army, and cover what have seemed some of the more difficult points for the general practitioner to decide.

For the Army the Adjutant General has fixed certain standards of weight, and for the Draft Boards the Provost Marshal General has fixed other and similar standards. These tables of weight give a normal minimum weight, from which the examining physician is allowed certain discretionary deductions for each height. This final minimum weight is to be accepted only in those cases where the examiner considers the candidate thoroughly sound in other respects. If we consider that 90% or more of all adults have had tuberculosis in some form at some time during life, and that a large proportion of all chests show some signs of a past or present tuberculosis of the lungs, this seems to me one of the important considerations in deciding whether or not to allow a candidate who is below the normal weight for his height to be accepted for service. If a man be of good weight the presence of dulness or of harsh or bronchial breathing at either apex without symptoms and without râles, is of no importance, probably; certainly we cannot afford to consider it as any disqualification. On the other hand, such signs would influence me against accepting a man who was much below the normal weight. So far as I know, there is no weight in excess of the standard, which precludes the use of any man for some branch of the land service, provided always that he is not too obese, is active, and has feet strong enough to stand up under his weight. This question of strength of feet is usually the deciding factor as to the acceptance of a man above 190 pounds in weight.

Since other conditions than tuberculosis may cause harsh, high-pitched inspiration, and crepitant râles, it may be advisable in some cases to have a re-examination at the end of a week. It is perfectly practicable, when the rush of work is not above the ordinary, to take temperatures on suspected cases, often with suggestive results. Again, since blood pressure determinations are a routine procedure in all candidates for commissions in the line of the army, it is feasible to take the blood pressure in phthisis suspects. Personally, I feel that a low systolic pressure, say below 120, with a pulse pressure below 25, is suggestive of phthisis and in any case indicates a vitality or cardiac competency insufficient for the service.

It was a great surprise to three of us taking routine blood pressures on a group of men under thirty years of age, examined for line commissions, to note the number of tests giving 140 and 150 mm. systolic readings, sometimes repeated in two or three tests in the same person at different hours or on different days. These were all in men who showed nothing in the urine. Several men, indeed, in this group of young men gave systolic pressures of 160 and 170. I am inclined to believe that in some at least of these cases excitement was a factor in producing this increase of pressure.

Another fact which I have found to be not uncommon in men showing nothing else abnormal, is the occurrence of high-pitched inspiration without other signs, at the base of the left lung behind. The cause of this I have been unable to determine.

Upon what grounds shall one decide whether the applicant in question has a functional heart murmur? In the instructions issued by the Adjutant General, and even more fully in those given to the draft examiners, stress is laid upon the importance of secondary signs, such as enlargement of the heart, edema, cyanosis or dyspnea, the presence of secondary signs being considered essential to a diagnosis of organic disease. Richard Cabot has always taught his students that in order to make a diagnosis of mitral regurgitation, there was necessary, in addition to the systolic murmur, the presence of either an accentuated pulmonic second sound, or proof of enlargement of the heart, or both. Furthermore, there has always been great comfort to me in doubtful cases, to find the murmur propagated to the axilla or to the back. When the systolic murmur could be heard in the back, I felt assured that there was an organic lesion. Recently I have seen two recruits in whom the x-ray shadow of the heart was not enlarged, and in whom the electrocardiogram indicated the absence of any organic disease, but with a murmur which was plainly audible in the axilla and in the back. Since then I have seen two other cases in which there was no enlargement of the heart to percussion, with no dislocation of the apex downward, with no increase in the pulmonic second sound, but with a systolic murmur loudest at the pulmonic area, heard at the apex and transmitted to the axilla and to the back. Such cases as the last are quite common among the large number of men whom I have examined in the past six months and are very unsettling to one's preconceived ideas as to the signs of valvular heart disease. It has been suggested to me that such cases as I have cited represent congenital heart disease, and this may very possibly be the explanation of cases where a murmur is transmitted to the back, without enlargement of the heart or accentuated pulmonic second sound. If this be the case, however, then congenital heart disease is commoner than I have been accustomed to believe. While I am willing to admit that a loud murmur at the pulmonic area, best transmitted to a point related to the root of the lung in the back, may in some cases be explained as being of auricular origin, which is the view of some observers, it does not seem to me that this explanation can assume a normal mitral valve;—and I do not feel that this theory covers the murmurs heard at the apex, which are transmitted from the apex, to a point in the back corresponding to the level of the apex. In these questionable cases, the apparent myocardial effi-

ciency, as evidenced by testing the effect of work upon the pulse rate, was normal. Of one thing, at least, I am certain, and that is, that these men with such murmurs as I have described, without cardiac enlargement or increased pulmonic sound, are physically fit for active duty in the army, and have, for any practical purpose, essentially normal hearts.

During the past months, I have seen three cases in which the heart was enlarged to percussion, in which there was a systolic murmur at the apex transmitted to the back, and in one of them there was a dislocation of the apex beat downward. Neither the fact that the electrocardiograph was said to show the absence of a valve defect, nor the statement that the x-ray proved the absence of cardiac enlargement, has satisfactorily disproved the diagnosis of mitral regurgitation which I made in these cases. It does not seem to me that the electrocardiograph nor the x-ray is any more infallible in heart disease, than we know to be the case as regards the x-ray in lung and gastro-intestinal work. Personally I still cannot believe that a cardiac murmur is transmitted to the back, without some organic change from the normal, either in the shape, size or number of the cardiac orifices, or in the valves. To my mind, having the candidate lie down does not give any material aid, in most cases, in differentiating between an organic and a functional murmur.

The question of tachycardia as an indication of valvular or myocardial disease, and the "work test" as mentioned above, are in my opinion of relatively little use except in the stolid, unemotional or bovine individual. For instance, doctors and dentists whom I have examined, almost invariably have a high pulse rate, and this is also true of a large proportion of candidates for commissions. While in theory it is true that when a rapid, nervous heart is put under the strain of added work it will steady and slow down, in practice this does not usually seem to be a fact. Hence while tachycardia is set down in the regulations as a cause for the rejection of recruits, and probably quite correctly, as relating to the class of men enlisting in peace times, it would not seem to me to apply to a considerable number of candidates for the army at present. In any event, considerable judgment must be employed in estimating the importance of a rapid heart in each individual. On the other hand, I feel sure that in some cases, the only remaining indication of a previous endocarditis, where the murmur, as so frequently happens in the case of children, has disappeared, is this tachycardia or the presence of marked excitability under emotional stimuli. In this connection, I do not mean to say that many of these mitral leaks of childhood do not clear up absolutely, leaving no signs nor symptoms of any sort.

Supposing that one is examining such a candidate with a systolic murmur, and one is in doubt as to whether this sound is heard only at the base of the heart, or whether it is also audible at the apex, it has frequently seemed to me that I could hear the murmur better in the posterior axillary line at a level one inch below the angle of the scapula; certainly that I could isolate and identify the sound better at this location than was possible at the apex. To me it has been quite surprising to see the number of athletes, swimmers, distance runners, and basketball players, who have a definite valve leak, and yet are able to continue competition. It would seem as if such men could be used for some branch of the service for clerical positions.

When only one test chart is used for the purpose of testing vision, it is sometimes difficult to determine the degree of sight in the two eyes, particularly where the first eye tested has the better vision. One man who was being tested as to his eyesight, was almost blind in his left eye, but he had memorized the 20/20 line almost perfectly, so that he could read the letters forward and backward, and could skip every other letter successfully. In suspicious cases it is often useful to use a card with a hole cut in it so that only one letter at a time is seen. Also a second chart, kept under cover except when needed for use, is a help. If the waiting line of men have the opportunity to study the chart or to hear the reading of it by preceding men, it aids them to memorize the letters. Usually, by asking the applicant to read every second, third, or fourth letter from either end, one can avoid errors. For this reason, a chart with a large number of letters on each line, is of value. Charts for the eye test vary greatly in the sharpness and clearness of printing. One of the simplest, cheapest, most portable and certainly not the least accurate, of the color vision tests, is a card with eighteen squares of colored paper on it, made by Brown & Burpee of Manchester, N. H., and sold by the Globe Optical Co., Boston, Mass., for 50 cents.

A good many men who have been rejected for the army or for Plattsburg on account of hernia, have this defect remedied by operation and present themselves for re-examination. I have been inclined, in cases where the result was good, to accept such men within a few weeks of operation. Surgeons tell me, however, that these men are not fit for army work in the field under six months after operation. A large number of men have relaxed or enlarged inguinal rings, and in some of them, while there is not definite protrusion of the bowel, there is a definite impulse on cough. While such cases do not represent a definite hernia, there is always risk of symptoms occurring, even if the signs do not increase; hence such applicants should be viewed with suspicion.

To me as a medical man, a candidate who has recently been operated upon for varicocele, or who has a radical operation for the cure of hydrocele, and who presents, as all such patients do, so I am told, a much infiltrated condition of

the groin and scrotum in the one case, or marked thickening of the epididymis in the other—such cases, I may say, are viewed by me with deep, inherent distrust. My surgical friends tell me that in such operations one should not expect complete absorption under six or eight months, or even longer, and candidates may safely be accepted in spite of the thickening of the tissues.

Another difficulty arises as to what should constitute a disqualification on account of foot defects. The presence, merely of a very marked degree of flattening of the anterior or posterior arch of the foot, is not a disqualification, since thoroughly flat feet, strong functionally, and without symptoms, may, and usually will, carry weight better than a beautifully shaped, high arched foot. Again, feet, that (so far as the tracks of the soles upon the floor are concerned, seem perfectly normal) may occasion a disqualification of the applicant because of marked pronation, with weakness;—"knock-ankle" as Dr. E. H. Bradford has termed it, and eversion of the foot upon the ankle. Strength, mobility, freedom from symptoms and a consideration of the man's weight are the fundamental points in judging the competency of a pair of feet. Some of the flattest arches that I have seen, have been in men of very light build. Symptoms in connection with the feet are often misleading, since a candidate eager to enter the service will deny ever having untoward symptoms of any sort:—on the other hand, real or alleged foot troubles are a favorite cause for claim for excuse from military duty or for a discharge from the service. Many feet that are flat from the wearing of improper shoes or from lack of the use of the muscles can be much benefited by muscle training, and many cases of pronation can attain a high degree of serviceability by the use of a wedge under the inner side of the heel, the so-called "modified Thomas heel." This is of course difficult to provide in the case of soldiers, who wear out shoes fast, and for whom specially altered shoes cannot be provided in numbers. In this connection, I have been interested to see that the chief orthopedic authority of the British Army,[1] has advised that all soldiers should be provided with shoes the heels of which are higher on the inner side, which would seem to me to be a useful and feasible suggestion.

REFERENCE.

[1] Notes on Military Orthopedics, p. 44, Colonel Robert Jones, C.B., Inspector of Military Orthopedics, British Army Medical Service. Paul B. Hoeber, New York, 1917. (Abstracted in part in Journal American Medical Association, Aug. 4, 1917, p. 401.)

THE ARMY SURGEON OF OTHER DAYS.

BY HOWARD DUDLEY KING, M.D., NEW ORLEANS, LA.

THE army surgeon of the present day is a most fortunate individual if we are to compare him with his brother of the sixteenth century, who rendered service in the English civil wars. The surgeon of those times was poorly paid, and did not enjoy either rank or standing. However, in many instances the pay was fully commensurate with the character of the professional services rendered. In one respect the military surgeon of four centuries ago fared better than his more modern brother in that he was a non-combatant in the fullest sense. The medical man did not figure in the casualty list. It was rare to hear of a fighting Asclepiad, and still more rare to find a physician's name among the killed, wounded or missing. All throughout the civil wars military surgeons appear to have been treated by both sides as non-combatants, and to have enjoyed certain privileges defined by custom rather than by any set rules or regulations. When in the field they wore a distinguishing badge, and to the credit of both sides the insignia was accorded the fullest respect. No surgeon was allowed on the field without his baldric. Military surgeons were often allowed to enter a hostile camp or fortress in order to treat wounded men of their own side, and seldom was the privilege abused. Medical men falling into the hands of the enemy were not usually retained as prisoners, and in many cases they made no distinction between Roundheads and Cavaliers if human suffering was to be relieved. As an example of the goodfellowship extended the medical men of those days, the following anecdote is most noteworthy. In 1644, Henry Johnson, surgeon of the King's own troops, wrote as follows to the Parliamentary Governor of Newport, Pagnell, asking for the relief of his apprentice who had been captured in a skirmish at Kidlington:

"It is very well known how careful I have ever been in dressing your wounded men whensoever they have fallen into our hands. Therefore, if you will give him a speedy release and safe pass to Oxford I am very confident that the favor shall not pass without an endeavor of recompense, for if at any time any chirurgeon or wounded men of yours shall fall into our hands my care of getting releasement or dressing those that have need thereof shall manifest how great a favor you have done to your obliged servant."

In the armies raised by Parliament there were usually two or three medical men attached to the staff of the general, who supervised and controlled the medical administration of the whole army. Aside from regimental surgeons, there were also a score of assistants and medical understrappers. In the list of Essex's army there appear a "physician to the train and person," Dr. St. John, and a "surgeon to the train and person," Laurence Lowe. In the list of New Model the names of four medical officers appear among the staff, two physicians to the army, an apothecary to the army, and a surgeon-general to the army. The armies in Ireland and Scotland had each attached a physician-general, a surgeon-general, and an apothecary-general, and this arrangement survived in the post-Restoration army.

The chief of these officials was the physician-general, who was usually a man of some standing, and was paid accordingly. The rate of pay was ten shillings per day, or about $2.50. Next in point of rank and pay was the apothecary-general whose salary was six shillings and eight pence a day, an equivalent in our money of $1.50. The surgeon-general was not alone last in rank, but also in pay. His remuneration never exceeded four shillings or a dollar a day. Cromwell's surgeon-general received no more than the American private of today. Each surgeon had a couple of assistants who received about forty-eight cents a day. In 1651 the surgeon's pay was advanced from a dollar a day to a dollar and a half, or six shillings; in 1655 it was fixed at five shillings, and the economists cut off one of his assistants; in 1657 the surgeon's pay was again reduced to the original four shillings a day. Whenever the matter of economy was broached in Parliament the surgeon's pay was juggled with. Monk, who was in command of the army in Scotland, considered the army surgeons underpaid, and ordered those under his direct command to be enrolled as privates in order to give them an additional nine pence or eighteen cents a day. Dual office holding in military circles thus is not of recent origin. However, Monk seems to have been actuated by kindlier motives than countenancing petty graft.

Very few of the military surgeons of the sixteenth century were really competent men, and not many attained the distinction of being enrolled in the Royal College of Physicians. General Monk vigorously resented one of Cromwell's appointments in the person of a certain Mr. Fish, surgeon to the artillery train. Fish was a former surgeon's assistant who had resigned to avoid a court-martial for misconduct. Monk exercised the greatest care in the selection of his medical officers.

As many of the army surgeons were men of the most mediocre ability, it was customary in important cases to call in other aid. Parliament sent a special physician to Northampton to attend Skippon, who had received serious wounds at the battle of Naseby. In 1651 Cromwell fell ill in Scotland, and two of the leading medical men of London were immediately despatched to Edinburgh by the Council and State. These outside practitioners were always liberally paid for their services.

When a soldier reached a hospital, either through illness or injury, a certain proportion of his pay was stopped to pay for nursing and drugs. There were no movable hospitals attending the army during active campaigning. In 1643, Essex sent the wounded soldiers from the siege of Reading up to London for treatment. An order of Parliament at that time reads "that the Lord General hath been enforced to send back many sick soldiers to be billeted in some remote houses and towns, some miles distant from London till it shall please God to restore them health and ability to again return to his army." The badly wounded were left in villages near the battle field, where a small pittance was usually paid for their medical care, but most frequently they were left to their own devices.

Throughout the first and second civil wars the London hospitals supplied the only permanent provision for the cure of sick and wounded soldiers. St. Bartholomew, Bridewell, St. Thomas, and Bethlem, the most famous of London's hospitals at that time, were freed by Parliamentary Act of all taxes and assessments on the ground that they treated many of the wounded soldiery. In a short time these institutions proved insufficient for the care of the soldiery, and it became necessary to build special military hospitals. Army hospitals were now established in various parts of Ireland, Scotland, and even in Flanders. As to attendance on the patients, there were no hospital orderlies in those days, and the nursing was entirely done by women. These nurses were by special order chosen from the widows of soldiers. The various hospitals drew up rigid regulations governing the conduct of both nurses and soldiers. A soldier who got drunk or used profane language was fined, and a repetition of the offense meant expulsion. A nurse who neglected her duty, or "made any disturbance by scolding, brawling or chiding" was punished in much the same way as the drunken soldier. If a soldier married a nurse both were to be expelled at once.

Clinical Department.

GONORRHEA IN YOUNG MALE CHILDREN, AND ITS TREATMENT.

By Walter D. Bieberbach, M.D., Worcester, Mass.

Urethro-vulvo-vaginitis, due to gonococcus, in young female children is not a rare disease and, especially, this is more true among the poor and children that are housed in institutions. It is easily seen that young female children can readily contract this disease from parents or other older members of the home by direct contagion or indirectly, through the agency of towels, wash-rags, fingers, toilets or bed clothing. Then it has been shown that when one case is introduced into an institution the disease spreads rapidly, probably by the medium of the bath, toilet or towels. This is an affection which recent studies have shown to be much more prevalent than has generally been believed, and it is not uncommon for a physician to see several of these cases during the year. However, gonorrhea in the male child is a rare disease, at least in boys under twelve years of age; in this respect affording a marked contrast to gonorrheal urethro-vulvo-vaginitis observed in the opposite

sex. The cause, as suggested by some authors, is an attempt at intercourse, often suggested by a much older female.

I believe that it is the general opinion of the physician that very exceptionally the contagion may be mediate by means of fabrics or by foreign bodies previously infected, being introduced within the urethra. Such cases, I believe, do exist, as I will demonstrate in a boy four years of age, who was referred to my services at the Worcester City Hospital. Too much careful attention cannot be paid to inflammatory conditions of the prepuce or penis, and this is true when one is dealing with a long foreskin where a phimosis exists. When these conditions present themselves and there is a pussy discharge, it is wise to examine carefully the discharge microscopically to try to find out what form of a micro-organism we are dealing with.

It has been shown that in the normal urethra there are micro-organisms identical in all respects with the gonococcus. Identification of these micro-organisms under the microscope is not a proof of the specific infection, and this is more apt to be true if the child is suffering from a phimosis where retained secretions are liable to cause an infection of the urethra. Should an organism be seen under the microscope that resembles the gonococcus, then one should resort to cultivation on artificial media and positively prove the nature of the infection. Therefore, it is wise in all such cases carefully to search for the gonococcus, since simple irritative urethritis is by no means uncommon and is, in the beginning of its course, not to be distinguished clinically from true gonorrhea.

I have had in the last short while the experience of falling flat in my diagnosis in which two male children were referred for circumcision for phimosis, later to find, folowing the operation, that I was dealing with a case of gonorrheal infection. One takes too much for granted that such a condition could not exist in children of six and four years of age, and this led me to believe that I was dealing with a simple urethritis, the primary cause being a tight, long prepuce producing balanoposthitis. However, this one point shows that, regardless of age, one should first proceed in all cases with a microscopical examination, as in children of this age gonorrhea is generally contracted in the ordinary manner.

The cases that I will report will show that it is possible for the male child of very young age to be infected, either by direct or indirect contact.

CASE 1. J. P. a boy of six years of age, well developed physically, presented a marked case of phimosis. There was considerable narrowing of the preputial orifice, so much so, that it was impossible to retract the foreskin over the glans penis. About the margin of the prepuce was a copious offensive white discharge. The foreskin was tender, edematous and swollen. At this visit a diagnosis was made of phimosis, the cause being balanoposthitis, due to a long, tight foreskin. The treatment advised was circumcision, and on the following day the child was operated upon. On account of the marked edema, circumcision was performed under ether. A dorsal incision was made and the flaps trimmed. The edges were sutured with catgut. Some few hours after operation the child was unable to urinate. The dressings were removed and the external meatus was found to be pointed and swollen and glued together. On separating the lips of the meatus, there was a free flow of thick white pus, which relieved the child, thus allowing him to pass his urine. Microscopical examination of the pus showed a number of Gram-negative diplococci, both intra- and extracellular. Cultures were made which proved the presence of gonococcus.

A few days after, the mother brought to the clinic the younger child, who was three years old, complaining that he was having trouble similar to his brother. On examination he presented the same condition as the first, except that the foreskin could be retracted over the glans penis showing a free urethral discharge. Microscopical examination of the discharge showed the presence of gonococci, and they were found on culturing. In the case of the boy of six years, both urines were cloudy, containing pus and a number of shreds, showing that he was suffering from an acute antero-posterior gonorrheal urethritis. The first urine of the boy of three years was cloudy, the others were clear and the diagnosis being acute anterior gonorrheal urethritis.

An attempt was made to learn the source of infection. The mother and father were asked to submit to examination; also the remainder of the family, which consisted of a girl thirteen and a boy eighteen years old. The boy was a step-brother to the other two children, his father having been dead for the past few years and this being his mother's second marriage.

The mother and father denied all venereal disease and on examination were negative. The oldest boy of eighteen gave a history of suffering from an acute attack of gonorrhea four months ago. He had been under the care of a physician, and one month before the children were admitted to the clinic he had been pronounced cured. At the time of my examination he had no signs or symptoms of the disease, and from my examination I would say that he was cured. A gonorrheal complement-fixation test was done and reported as negative.

Examination of the girl of thirteen showed that she had a ruptured hymen, and on separating the vaginal wall there was a somewhat free, thin greyish discharge, which on microscopical examination showed the presence of gonococci. Smears made from the urethra were negative. From the absence of the acute symptoms and the microscopical picture, I would say that the girl was suffering from a subacute or chronic gonorrheal infection.

The fact that the three children were suffering from gonorrhea was all that I was able to obtain. It was impossible to get a clear history of any of the cases.

The mother and father could give very little information as to the source of the infection. They stated that the boy of six years and the girl of thirteen attended school every day, while the child of three was kept at home. Furthermore, none of the children were away from home for any length of time. I thought that if some one was sent to the house of the parents to investigate their mode of

living, we might be able to come to some opinion as to the source of infection.

The case was reported to the Society for the Prevention of Cruelty to Children and, through their kindness, a female agent was sent to investigate the living conditions of the family. Each of the children was questioned closely, but no information could be obtained from the boys that were suffering from gonorrhea. They were very stubborn and refused to answer questions. The girl of thirteen was taken into a room alone and after careful questioning admitted that some few weeks before, while the parents were away one afternoon, the oldest boy of eighteen placed her on his lap and attempted intercourse. Following this attack she suffered considerable pain and for some time afterwards experienced a burning sensation on urination. She said nothing to her parents of what had happened; the reason for this we are not able to have her explain.

On the day of the examination the boy of eighteen learned on his return home that an agent of the Society had been to the house to investigate the cause of infection. Confronted by his mother on what had transpired, he immediately turned about, left the house and to this date has not been heard from.

My conclusions as to the source of infection in this case was that the boy of six contracted the disease from the girl of thirteen. They both occupied the same bed and the sexual organs of the male child were well developed and much larger than the average child of the same years.

The younger child of three slept with the boy of six on different occasions and probably contracted his infection from discharges that had contaminated the bed clothing.

The girl's infection dates back to the time that she states that the older boy of eighteen attempted sexual intercourse with her. At that time the boy was suffering from subacute gonorrhea and, I believe, infected his step-sister.

In this case we have the direct and indirect method of infection, the older child receiving his infection from the female, and the younger child indirectly from coming in contact with some article that was contaminated with the discharge of the child of six years.

CASE 2. T. Mc., a well developed boy of four years, physically and mentally normal. He was admitted to the service for circumcision. *Examination.* He had a marked phimosis with a moderate lymphangitis extending along both sides of the shaft of the penis. The external orifice of the prepuce was reddened, and on stripping the foreskin a thin, white, pussy discharge was noticed. A diagnosis of infected balanoposthitis was made and circumcision was advised. At this visit the child was etherized and circumcision performed by the dorsal slit method. Patient was discharged and advised to return for future dressings. Late on the night of the operation, I was called to the patient't house and informed that the child was unable to urinate following the operation. During the day the mother had called in a physician to relieve the retention, and sedatives and hot baths had been given, with no results. On my visit I found the child to be suffering from pain, walking about the house, straining every few minutes in an attempt to urinate. On stripping the urethra there was a profuse white pussy discharge, of which I made several smears, and later on returning to my office found that they contained many intra- and extracellular Gram-negative diplococci. At this visit I decided there was but one thing to do in relieving the child and that was catheterization, for everything had been done, such as hot sitz baths, by the former physician, with no results. The patient was placed on the kitchen table and a soft rubber catheter, size 10, french, was inserted into the anterior urethra, just to the cut-off muscle, and the urethra was gently irrigated with a hot 2% boric acid solution. Following the anterior irrigation the catheter was removed, boiled, and gently introduced within the bladder. The bladder was relieved of 10 ounces of clear, normal urine and followed by slow irrigation with hot boric acid solution. The child was immediately relieved and soon fell into a sound sleep. The mother was advised to return on the following day for future treatment, which she did, and stated that the boy was able to pass his urine, but was obliged to urinate frequently, about every hour. At examination this time I was able to get pus for culture which showed a gonococcus growth. The urine of the first and second glasses was cloudy and contained pus, showing that the child was suffering from an acute antero-posterior gonorrheal urethritis.

In tracing the source of infection in this case I learned that the mother kept boarders and that in the household there was a female suffering from gonorrhea, and one male with an acute case of antero-posterior gonorrheal urethritis complicated with an acute epididymitis. The child used the same toilet, and was in the habit of getting into bed with these members that were infected. Their habits were such that careful examination showed that the child no doubt received his infection by indirect contact, coming in contact with some infected object such as toilet or bed clothes. In this home was a female child of three years, and special instructions were given as to prophylaxis and care of the child so as to prevent infection. With all care and instruction the female child developed, one week later, a severe urethro-vulvo-vaginitis.

Care and Treatment of the Boys.

Prophylaxis was placed on all cases. The mothers were instructed as to the pussy discharge and ordered to burn all dressings. They were also warned of the dangers of gonorrheal ophthalmia.

The children were placed on a non-stimulating diet, excess of meat was avoided, also highly seasoned, salty food. Liquids were restricted to milk and water, water being used very freely. For the purpose of catching the urethral discharge and keeping it away from the clothing a small bag was made in which the penis was carried. Absorbent cotton was placed in the bottom so as to catch the discharge.

Therapeutic Treatment.

Internally the two older boys, six and four years of age, were given five minims of thyresol in small round capsules three times a day, one hour after meals, while the boy of three received but two a day. From these doses their stomachs and kidneys showed no irritation and they were able to take this amount during the course of treatment, with rest spells in between. Milk and water were forced and bowels were kept well open.

Local Treatment.

Case No. 1 was carried on protargol irrigation with a solution of 1:8000 and gradually increasing the strength to 1:4000. Irrigation was performed by inserting a soft rubber catheter, size 10, french, into the anterior urethra and gently forcing this fluid through by means of a large hand syringe. Following this a clean catheter of the same size was introduced just behind the cut-off and the same solution was forced through the posterior urethra to the bladder. When the child complained of bladder fullness it was removed and the child was allowed to stand and empty the bladder. This line of treatment was carried out every second day, occasionally the child skipped a treatment on account of the mother being unable to come. The younger child of three years never developed a posterior infection, and simple anterior irrigation was carried out. This child cleared up in four weeks, while the one with the posterior infection took six weeks. In case No. 2, hot potassium permanganate was used in increasing strength when at about the sixth week the case was at a standstill, both glasses still hazy and there was a slight daily discharge. The treatment was changed to silver nitrate, followed by a marked improvement, starting with 1:10,000 solution and working down to 1:4000. This last was followed by discomfort to the patient, but was relieved, when too severe, by saline irrigation, which immediately stopped all burning. In seven days all discharge subsided and both glasses of urine were clear and sparkling. After all local treatment was stopped, both children were kept under observation. Repeated swabs were taken from the urethra and were all found at each examination to be negative. Urines of three glass tests were clear and no other symptoms present, the children were discharged as cured. During the course of treatment the children suffered no ill effects. They held their weight and apparently did not seem to be greatly disturbed. By being very gentle and gaining their confidence, I found no trouble in having them submit to treatment.

I believe that this article shows the importance of microscopical examination in children suffering from phimosis; by so doing one is in a position to determine at the first visit the form of micro-organism that is present and at the same time make a correct diagnosis.

Society Report.

BOSTON SURGICAL SOCIETY.

(INCORPORATED.)

MEETING No. 19.

A CLINICAL meeting of the Boston Surgical Society was held on Monday, November 5, 1917, at the Carney Hospital, at 10 a.m.

PAPILLOMATOUS OVARIAN CYST WITH TWISTED PEDICLE.

Dr. John T. Bottomley operated on a widow, 36 years old, who thirteen months before had found, in the right lower quadrant of her abdomen, a round mass of the size of an orange; a month later there appeared acute symptoms which indicated the presence of an ovarian cyst with a twisted pedicle; these subsided in the course of a few days. The tumor continued to increase in size till, about a month before the woman entered the hospital, acute symptoms again developed in the lower abdomen; these, too, gradually subsided and she now presents a moderately tender, tense, smooth mass rising out of the pelvis almost to the level of the umbilicus and more prominent on the left than on the right side. A preoperative diagnosis of "ovarian cyst with a twisted pedicle" was registered. At operation a right ovarian cyst, size of a football, showing many evidences of recent, as well as old, inflammation, with a thick, short pedicle twisted 1½ turns in a direction opposite to that of the hands of a clock, was first removed. Its papillomatous nature was then evident and consequently the uterus and the other tube and ovary were quickly removed. Suture of the abdominal wound without drainage concluded the operation.

Note. The discovery of the papillomatous projections made the other step of the operation necessary. The tumor was removed through an abdominal incision of sufficient length to ensure delivery of the tumor without rupturing it—something much to be desired in such cases, in the handling of which the short incision should have no place. The pathologist reported, "papillary adenocystoma of both ovaries with hemorrhage and necrosis." The convalescence was entirely normal.

"ESSENTIAL" UTERINE HEMORRHAGE.

Dr. Bottomley operated on a widow, 39 years old, with one child, for metrorrhagia which had been almost constant for the preceding two months, and which, despite treatment, had been present and troublesome for about a year. The physical examination showed little except the general signs of a steady loss of blood. The preoperative diagnosis was put down as "'essential' uterine hemorrhage." At operation the slightly enlarged uterine fundus and the left tube and ovary were removed; the right tube and ovary were left *in situ*.

Note. The real cause of the bleeding was not disclosed by the pathologist, who reported only "slight chronic endometritis." The convalescence was uneventful. Dr. Bottomley had had the patient under observation for a year before operation and was unable to discover the reason for the bleeding, which was not permanently checked by any of the usual remedial measures.

GALL-STONES; STONE IN THE COMMON DUCT.

Dr. Bottomley operated on a woman, 52 years old, who, fifteen years before, had had a definite attack of biliary colic. Since then she had suffered from what she termed "indigestion" until three months before her entrance to the hospital, when she had a very severe attack of pain in the upper abdomen, with chills, sweats and jaundice; she was very ill for nine days and then gradually grew better. She is said to have had "sugar in her urine" for the past year, but in none of the urinary tests made before operation was sugar found. The preoperative examination showed nothing of note except a very fat abdominal wall, with marked tenderness and some muscular spasm in the right hypochondrium.

At operation, a gall-bladder packed full of stones was removed; a single stone, felt in the hepatic duct, was forced down into the common duct and removed; exposure of the common duct was difficult because of the many adhesions present; the pancreas was not abnormal to palpation; the common duct was drained.

Note. The convalescence was not noteworthy except for the fact that, three weeks after operation, bile was still escaping from the drainage wound, though in gradually decreasing quantity.

PROCIDENTIA; CYSTOCELE; RELAXATION OF THE PELVIC FLOOR WITH RECTOCELE.

Operation. Watkin's operation for procidentia and cystocele; Crossen's operation for relaxation of the pelvic floor, attended with rectocele.

Dr. F. W. Johnson operated; the patient, 44 years old, was admitted to the hospital, complaining of falling of the womb, backache and general weakness. Her mother died of cancer of the stomach, one brother died of tuberculosis; the patient's previous history was not important, except that she had typhoid fever twenty-five years before, and said she had been treated for "edema" nine years previously at the City Hospital. She had been married twenty-four years, had had nine children, the oldest 23 years, the youngest 4 years; she had never miscarried; her last menstrual period was in December, 1916. All labors had been normal, as had the puerperia,—except the last one, when she said she had "heart trouble."

For the past year the patient had noticed that "the womb came out of the vagina"; at first it was possible to replace it, but not in the last few months; there was much frequency in micturition, with pain and dragging in the sacral region.

Examination of the urine showed a slight trace of albumen, no sugar, sp. gr. 1.010, with pus and mucus in the sediment. Blood pressure, S. 148, D. 110; hemoglobin 80%, white blood count 9000.

Dr. Johnson operated upon a second case, showing laceration of the cervix; prolapse of the uterus; cystocele; relaxation of the pelvic floor with rectocele.

Operation. D. and C. Emmet's amputation of the cervix; Watkin's operation for prolapse and cystocele; Crossen's operation for relaxation of the pelvic floor, attended with rectocele.

The patient was 40 years old, married for thirteen years; she had had six children, the oldest 12 years, the youngest 2 months; since the birth of the last child, "falling of the womb" had prevented her from getting about for ordinary household duties. There was profuse leucorrhoea: urine examination was negative.

OPERATIVE NOTES.

In the above two cases the prolapse of the uterus and the cystocele were remedied by the Watkin's operation of interposition. This operation should not be performed when future pregnancies are anticipated.

The methods employed which we have found by experience to be the most satisfactory in separating the vaginal wall (cystocele) from the bladder, and in securely fastening the uterus in anteversion to the anterior vaginal wall after removal of the slack, are described below.

Cystocele. A male sound is passed into the bladder and turned around so that its point pushes the bladder downwards and forwards in the median line, and towards the operator. Just below the point of the sound, an incision is made through the vaginal wall, care being taken to go through the *fascia* of the anterior vaginal wall. This incision is carried laterally as far as needed to take in the slack when removing the redundant portion of the anterior vaginal wall. The sound is removed and the tissue on either side of the incision is grasped by two strong-holding forceps (Ochsner), put and kept firmly on the stretch, while a long, pointed, curved scissors (concavity towards the operator) is worked up under the fascia until the point of scissors reaches well beyond the junction of the bladder and urethra. As the scissors are removed they are opened. The anterior wall is then divided its whole length by straight scissors. This method enables you quickly, and without danger, to remove the fascia wholly from the bladder, and from the tissues on the sides. After the uterus is delivered it is fastened to the anterior vaginal wall, every suture including the fascia. It is only by utilizing the fascia that you prevent for good the return of the cystocele. Silkworm gut is used for the first three sutures, the first being passed through the fundus uteri in front and just below the tubes. These sutures are shotted and allowed to stay in place one month. No. 2 chromic catgut is used for the other sutures, and each suture goes through the vaginal wall, including the fascia, and takes up a good bite of the uterus, so that when the op-

eration is finished, the uterus throughout its anterior surface down to the cervix is sewed to the fascia of the anterior wall. An important suture is the one which takes up the bite in the uterus at the junction of the body and neck. When tied, this suture straightens out the lower segment of the uterus, and throws the cervix back.

For the relaxation of the pelvic floor, attended with rectocele, Crossen's operation is done. No. 1 chromic catgut is used throughout in this operation.

The bowels are not moved for several days. The catheter is not used unless necessary, and after each voiding the parts are sprayed off. After forty-eight hours, a short vaginal douche of sterile water is given through a catheter, morning and night. For diet, the white of an egg in one-third tumbler of flavored water is given every three hours when awake, for six days. Water *ad. lib.*

MYOMATA UTERI.

Dr. Stephen Rushmore operated upon a colored woman, 29 years old, who had been married eleven years, but had never been pregnant. Menstruation began at 12 years, had always been regular, lasted 3 to 4 days, never profuse or painful, until the last year, when the flow has increased in amount, and lasted 6 or 7 days, often with clots. There had been a vaginal discharge for the previous four months with dragging down feeling in the back and lower abdomen; patient lost 15 pounds in the last four months. The urine was normal; hemoglobin 75 per cent., and blood count showed 11,000 leucocytes.

Examination showed no sign of infection of the urethra or vulvo-vaginal glands; the outlet was not relaxed; the cervix was fairly well up in the vaginal vault. The body of the uterus was irregular in outline, hard, firm, rising nearly to the umbilicus. A median abdominal incision was made from just below the umbilicus to the symphysis. The liver, stomach, gall-bladder and kidneys were normal. Omentum and intestines adherent in the pelvis by thin, filmy adhesions to the top of the enlarged, irregular uterus. These were freed and the intestines packed back and many adhesions in the pelvis of the enlarged uterus, tubes and ovaries were cut. In the uterus were two myomata, one near the right cornu, about one and one half inches in diameter, extending into the right broad ligament somewhat. The second was about three and one half inches in diameter, globular and extending into the left broad ligament. On account of the adhesions and the impossibility of lifting the uterus, it was removed first, going down on the left side, across the cervix and up on the right side. The tubes were closed, and were adherent, so they were removed with the right ovary. The left ovary was so adherent that only part of it was cut away. The cervix was cupped and closed; raw areas were closed over with peritoneum after suspending the stump of cervix to the stumps of the round ligaments.

The vermiform appendix was normal, and was removed, inverting tied stump through purse-string of linen thread and reinforcing.

Closure in four layers with catgut and silkworm gut in fascia and skin.

Comment. Owing to the shape, size and position of the larger myoma and the adhesions of the tubes and ovaries, it was difficult to expose the ovarian vessels, so that the incision for removal was made between the uterus and the left tube and ovary. Then by grasping the tumor with heavy, long-toothed forceps, it was easily rotated in the pelvis, exposing the left uterine vessels. These were tied and cut, and the incision was carried across the cervix, rotating the uterus still further, and up on the right side between uterus and tube and ovary. Where space is limited and the operator can see only a little way ahead, by working close to the uterus and tumor, injury to important structures can generally be avoided. When the larger mass is removed there is plenty of room for dealing with the adherent structures laterally, which also are near the large blood vessels.

A portion of the left ovary was not removed because it makes very little difference with these patients, clinically, whether a fragment of the ovary is left or removed, and leaving it is much easier than digging it out and perhaps getting raw areas which require packing and a drain to check oozing of blood.

The stump of the cervix was left. In the first place, the probability of danger from the cervical stump is slight, but the danger is, of course, a very serious one; cancer may develop. Then the post-operative mortality and morbidity is slightly greater after pan-hysterectomy. As to the advisability of removing the cervix, opinion is divided at present, but the older view, preferring leaving in the stump, still prevails.

A cone-shaped piece of cervix was removed before closure. By many this procedure is preferred to the use of the cautery. The knife gives two clean surfaces which heal quickly when approximated and, by carrying the incision low into the cervix, most of the gland-bearing area can be removed. The cautery gives a slough which must separate before healing takes place and which may easily become infected. Furthermore, it does not seem probable that the use of the cautery is more likely to prevent carcinoma later than is the knife. If anything is thought necessary to prevent carcinoma, the reasonable procedure is to remove the cervix.

The stump of the cervix was suspended by the stumps of the round ligaments. This gives support to the cervix, important in multiparous women, and makes covering over raw areas with peritoneum easier, appropriate for all cases.

OLD INFECTIOUS ARTHRITIS WITH ANKYLOSIS OF THE METATARSO-PHALANGEAL JOINTS.

Patient gave a history of old infectious arthritis of ten years' duration in which the joints of the toes were ankylosed, all of the metatarsal shafts being dislocated, resulting in the heads of the metatarsals being so prominent that the patient when walking bore weight directly on the heads, and causing almost total incapacity.

Dr. W. R. MacAusland (by invitation) operated, making a semicircular incision on the bottom of the foot, removing the distal heads of all metatarsal bones.

Note. Results of this excision are most satisfactory in those types of long-standing arthritic cases in which the heads are dislocated, resulting in tender, painful forefeet.

HYPERMOBILE SEMILUNAR CARTILAGE.

Dr. W. R. MacAusland (by invitation) operated upon a young woman who, for two months, had complained of pain and swelling in the right knee; the pain came on suddenly, the joint "caught" when walking and it was impossible to fully straighten it. She had been in the hospital six weeks; when she was admitted the knee was in 10 degrees permanent flexion; there were pain, sensitiveness and swelling in the region of the internal semilunar cartilage, and there was a small amount of fluid in the joint; x-rays were negative. Under rest and strapping there had been no improvement.

A lateral incision was made on the inner side of the knee and the internal semilunar cartilage found to be hypermobile. Nothing else was found in the knee joint to account for symptoms. This cartilage was removed *in toto.*

Patient since that time has made a satisfactory and rapid convalescence; 90 degrees motion in knee joint and walking without pain at the end of three weeks.

Note. The findings of persistent swelling, tenderness, and pain in the region of the internal semilunar cartilage, together with small amount of fluid, and particularly limitation of motion in complete extension, point toward injury of the internal semilunar cartilage. It is not necessary for a cartilage to be actually broken or entirely torn from its attachment to give symptoms. Removal of the cartilage *in toto* gives satisfactory results.

WALTER C. HOWE, *Secretary.*

AMERICAN PROCTOLOGIC SOCIETY.

NINETEENTH ANNUAL MEETING, HELD AT NEW YORK, N. Y., JUNE 4 AND 5, 1917.

The President in the chair.

Officers elected for the ensuing year:

President, Jerome M. Lynch, M.D., New York, N. Y.

Vice-President, E. H. Terrell, M.D., Richmond, Va.

Secretary-Treasurer, Collier F. Martin, M.D., Philadelphia, Pa.

Executive Council:

1. Alfred J. Zobel, M.D., San Francisco, Cal.
2. Jerome M. Lynch, M.D., New York, N. Y.
3. T. Chittenden Hill, M.D., Boston, Mass.
4. Collier F. Martin, M.D., Philadelphia, Pa.

The next Annual Meeting will be held in Chicago, Ill., June 10, 11, 1918.

THE PLACE OF THE PROCTOLOGIST IN A DIAGNOSTIC GROUP.

By Alfred J. Zobel, M.D., F.A.C.S., San Francisco, Cal.

(Abstract.)

Dr. Zobel in his address stated that the charter members of the American Proctologic Society were the pioneer teachers and practitioners of modern proctology. Through the efforts of the fellows of the Society, proctology has received recognition as a specialty, both from the American Medical Association and the American College of Surgeons.

Attention was again called to the fact that but few of the undergraduate medical schools give any adequate instructions in entero-proctology, by qualified men. In sharp contrast to this, it is noted that in every postgraduate medical school in the country there is a department of rectal and colonic surgery, whose existence is amply justified, not only by the number of patients which it treats, but by the large attendance of postgraduate students.

It is urged that the undergraduate medical schools, particularly those attached to universities, should take heed of the demands and needs of modern medicine, and that they should begin to realize that failure to impart instruction in entero-proctology, and in the other recognized specialties which have arisen in late years, impairs their standing as thorough teaching institutions.

Up to about twenty years ago, all the medical needs of a community were attended to by the so-called family doctor. But, year after year, changes have been going on until today is the day of the specialist.

This era of specialism gives evidence of the advancement and betterment of the whole profession; it means far more efficient service rendered to the public than it has received in the past.

It now requires a close and almost undivided attention to that subject alone, if one wishes to keep abreast with what is being accomplished in any special line of work.

With more knowledge and longer experience, the specialist better realizes the close relationship existing between his particular field and all the other parts of the body. He further

learns that while, from devoting his entire attention to his own special work, he excels therein, he consequently lacks knowledge, experience and adeptness in that of others. As a result, lately, among progressive men, there has arisen a movement to form what is known as "diagnostic groups." Group diagnosis is not a new idea. It has been used for years in the postgraduate schools, which are the only institutions possessing a staff of clinicians in every specialty of medicine and surgery. The present movement is simply an elaboration and an extension of the original idea.

Every diagnostic group should include specialists in every branch of medicine and surgery. In it should be an entero-proctologist, with training and experience sufficient to warrant the interpretation of his findings being considered of some value.

The Fellows of the American Proctologic Society have repeatedly urged the necessity for cooperation with the internist, surgeon, and other specialists. They have again and again pointed out that anal, rectal and colonic lesions often give rise reflexly to symptoms which may be wrongly attributed to disease in other parts of the body, and vice versa. This is especially true with regard to the reproductive and urinary organs of the male and female. Therefore, in the consideration of cases presenting symptoms in these parts, it is equally important to secure the opinions of the gynecologist, urologist, and proctologist before a correct and final diagnosis can be deduced.

It is the high-class men among the various specialists of medicine and surgery who best know the value of, and mostly insist upon the need for ano-recto-colonic examinations. They are the ones who best understand that through long and varied experience, skill in the use of the illuminated pneumatic sigmoidoscope, and ability to interpret correctly what is seen, the entero-proctologist is the one who should be relied upon to do this part in the diagnostic scheme.

The time has already arrived when even the laity recognize this, and they are now quick to take cognizance of the neglect of their medical adviser to secure for them an expert examination of the rectum and colon.

Every diagnostic group should include a competent proctologist. Only then will it be worthy of the name of "diagnostic group."

ADULT RECTAL PROLAPSE: TWO CASES AND A CONTRAST.

By Ralph W. Jackson, M.D., F.A.C.S., Fall River, Mass.

(Abstract.)

Too few papers have appeared from the pens of proctologists on the major types of rectal prolapse. The subject deserves more attention. Two sharply contrasting cases bring out the writer's views on the therapy. The first was operated four times; extensive regional cauterization resulting in recurrence; posterior rectopexy resulting in recurrence; amputation, resulting satisfactorily as regards anal prolapse, but leaving a very large posterior vaginal hernia, which was promptly cured by cul-de-sac closure with sigmoid-utero-ventral wall suspension. The second, and less favorable, case was promptly cured by one operation identical with the final operation in the first case. The pelvic floor as a support depends on the sufficiency of four factors. The pelvic fascia is variable in strength and attachments, varying the depth of the peritoneal cul-de-sac. The strength of the levators and their uplift is not a constant thing. The anal and vaginal orifices may be guarded by sphincters, peri-vulvar muscles, a perineum and levators which are imperfect through trauma or atrophy. An amount of adipose padding about these structures is essential, but often lacking. The rectum has imperfect support above the pelvic floor, and its anterior wall none at all. Prolapse begins here from external pressure, or begins below as anal protrusion, but eventually the prolapse contains a hernial cul-de-sac. Regional cauterization is inadequate to meet any such faults. Posterior rectopexy does not support the primarily offending part. Amputation removes the troublesome part, but does not correct the faulty factors, which may allow recurrence per anum or per vaginam. Cul-de-sac closure, though a difficult operation, goes far toward such correction, and suspension helps. The writer would summarize, that the operation of first choice for these very troublesome prolapses is cul-de-sac closure through the abdomen, plus some form of suspension, to be followed and supplemented, if need be, later, by amputation or perhaps some plastic work on the elements of the pelvic floor.

RELATION OF HEMORRHOIDAL DISEASE TO THE HEALTH BALANCE.

By William M. Beach, A.M., M.D., F.A.C.S., Pittsburgh, Pa.

(Abstract.)

In discussing the "Relation of Hemorrhoidal Disease to the Health Balance," Beach sums up as follows:

1. The deleterious effect upon the patient's mind by increasing his irritability, and making him anxious and morose.
2. The many reflexes coincident with ulcerated large or small type of hemorrhoids.
3. The influence upon the so-called vegetative functions of the body and intimate associations with diseases of the heart, lungs, liver and kidneys.
4. The refractory or retroactive relationship in most cases of constipation.
5. The tendency of neglected cases toward infections and cancer.

THE PRINCIPLES UNDERLYING THE CLAMP AND OPERATION FOR INTERNAL HEMORRHOIDS.

By W. Oakley Hermance, M.D., Philadelphia, Pa.

(Abstract.)

The author calls attention to the purpose of this form of operation.

First: To remove actual piles, or pathology.

Second: To support relaxed pile-bearing tissue and mucous membrane. After giving minute details as to his technic, he insists that only just *enough* tissue be removed to care for the pathology, being sure that columns of mucosa and skin be left betwen the eschars, thus preventing any undue contraction of the rectal outlet. Unless the tissue included in the clamp is excessive, it is not cut off, but is destroyed by the careful application of the cautery.

Care is taken that multiple strips of wet gauze are placed under the clamp to prevent undue radiation of heat to the surrounding tissues. Careful placing of the clamp, thorough cooking of the included tissue, combined with the crushing produced by the clamp, is depended upon to prevent such a complication as hemorrhage. After all danger of secondary hemorrhage has passed, the insertion of a gloved finger will overcome the tendency to contraction.

ORIGINAL RESEARCH WORK ON PRURITUS ANI.

By Dwight H. Murray, M.D., Syracuse, N. Y.

(Abstract.)

Dr. Murray read his seventh annual report on original research work in Pruritus Ani.

He said that he did not feel it necessary to continue to report the work in as great detail as in past years, because so many men in the profession, over such a wide area, were uniformly reporting a confirmation of his claims for the etiology being streptococcus fecalis.

He said that he is working with Parke, Davis and Company for the perfection of a standard stock vaccine that can be used by anyone without the trouble to make cultures. He has used some of this stock of polyvalent strain from eight successfully treated patients, and the patients on whom it was used seemed to improve. He has used it only one month, therefore full judgment must be suspended until it has had a longer trial.

During the past year he found the patients all getting worse at about the same time, and finally found that a laboratory worker had been deceiving him as to the strength and kind of vaccine; any kind of bacteria was used, and few, if any, streptococcus fecalis. The laboratory worker resigned shortly after this, and on getting the work in the hands of a proper man all went well again.

Dr. Murray reported that the work of the past year had still more strongly proven the correctness of the bacterial (streptococcus fecalis) infection theory as the etiology. His conclusions of the work are—

First: Conclusions of former years are confirmed, and most of them are strengthened by experience of the past year.

Second: The troubles I have had with the laboratory worker, as shown herein, give proof that the benefit received by patients, following the use of streptococcus fecalis vaccine, is not a coincident.

Third: Increasing proof that if rectal pathology is present with streptococcic infection of the anal skin, an operation will not cure the pruritus ani.

Fourth: Increasing proof that if rectal pathology is present without a streptococcus infection of the anal skin, an operation will cure the pruritus ani.

Fifth: Continued proof that there may be complicating infections of the anal skin, in pruritus ani, by staphylococcus or B. coli.

Sixth: Having published six years of research work, taking into account the report of physicians in this country and abroad who have confirmed his findings as to the skin infection, he feels justified in now claiming that the etiology of pruritus ani is a skin infection, and that the streptococcus fecalis is the usual bacterium.

ADENOMYOMA OF THE RECTUM.

By Frank C. Yeomans, M.D., F.A.C.S.,

Surgeon to the Central-Neurological and Workhouse Hospitals; Instructor in Surgery, College of Physicians and Surgeons, Columbia University, New York City.

(Abstract.)

The writer's interest in adenomyoma is due to the following case, which appears to be unique:

Mrs. V., French, aged 37, the mother of two healthy children, was seen in consultation in September, 1916, for rectal hemorrhage and pain. The important points of her history were: pulmonary tuberculosis (?) six years before, cured; menses painful, the flow diminishing; always constipated until three years ago. Then occurred attack of diarrhea lasting five months, and thereafter intermittent attacks. Past year ten to twelve movements daily, containing blood and mucus. Pain over sacrum is aggravated at menstrual period and with the diarrhea.

Physical Examination. Pale, but well-nourished woman, weighing 142 pounds. Wassermann of the blood, negative. Urine normal. Chest and abdomen negative.

Rectal Examination. Three and one-half inches up on anterior rectal wall, just above

cervix uteri, finger feels a hard, fixed, fairly tender mass, the limits of which cannot be defined. Proctoscope shows a superficial ulceration, size of a quarter, at recto-sigmoidal juncture. This is red, clean, and bleeds freely on contact. Vaginal examination negative, except in posterior fornix was felt the same mass apparently the size of a guinea-hen's egg.

Operation. Sept. 26, 1917. Left rectus incision. No growths were found in liver or other abdominal viscera. The tumor was located in anterior wall of sigmoid just above its juncture with the rectum, and extended down two inches on rectum, cervix uteri and posterior vaginal wall. Lower third of sigmoid was mobilized, including small portion of posterior wall of uterus and its cervix, and superior hemorrhoidal artery was ligated. Then the abdominal wound was closed, and in lithotomy position the operation was completed by a typical Genu-Tuttle extirpation of the rectum, including the posterior vaginal fornix. Patient reacted promptly from the immediate shock of the operation. Bowels acted on third day, and union of sigmoid to peri-anal skin was primary except at one spot, which soon granulated. Patient left hospital in three and a half weeks, and is now well, having normal anal sensibility for bowel actions, which occur once or twice daily, with normal control. Vaginal and rectal examinations show no abnormalities.

Interest in this and similar tumors in this location centers in their

(*a*) *Origin.* Suggested origins are uterine mucosa, Wolffian ducts, and "embryonic rests persisting from the fusion of Müller's ducts." The author's case was clinically an intestinal growth. Dr. James Ewing, after careful study, reported, "the most likely origin is from superfluous material derived from that portion of the lower gut which continues on in the embryo to the bladder and allantois, and which normally atrophies. Persistence of a portion of this segment would furnish a source of smooth muscle and intestinal epithelium. I do not think the tumor is of Müllerian origin."

(*b*) *Symptoms.* Varying with the development and site of the growth, the symptoms would be: obstructive, dysenteric or neuralgic.

(*c*) *Diagnosis.* Tumor imparts a rather characteristic feel. Apt to be mistaken for infiltrating, inoperable malignant growth.

(*d*) *Prognosis.* Histologically it is benign. Clinically it may be malignant from the symptoms to which it gives rise, or actually undergo malignant change.

(*e*) *Treatment.* Surgical removal at the earliest date possible. The abdominal route is preferable, but if tumor is at recto-sigmoidal juncture a combined operation will probably be necessary for its removal, as was successfully done in the writer's case.

PELLAGRA, THE PELLAGROUS INTESTINE, AND PERICOLIC VEILS.

By John L. Jelks, M.D., Memphis, Tenn.

(Synopsis.)

Dr. John L. Jelks describes recto-colonic conditions in pellagra, gives his observations in pellagra, which he has contended for seven years is an infection, which begins in the intestine in a similar manner as does typhoid fever; and contends that in all active or acute cases of pellagra he finds pathology in the intestines commensurate with other symptoms.

The speaker describes the prodromal and the late symptoms, and both the early and late pathology observed by him. The speaker describes the intra-abdominal, as well as also the gut pathology, in the different stages.

The speaker says pellagra seldom develops in sanitary and screened homes, and believes that sanitation, isolation, and the elimination of raw vegetables as a diet, and effectual screening, will control pellagra. He refers to the fact that the negroes and poor whites in his section have more money, and more to eat and a greater variety of diet than they ever had, yet that pellagra is increasing rapidly in the outlying districts about Memphis, though it seldom extends over into the sewered and screened section of the city proper. The speaker referred to a recent ordinance that had passed in the city of Memphis, requiring doctors to report all cases of pellagra, and to exercise the same precautionary measures in these as in cases of typhoid fever.

NEO-PROCTOLOGY: A GLIMPSE INTO THE FUTURE.

By Jerome Morley Lynch, M.D., F.A.C.S., New York City.

(Abstract.)

We cannot claim for proctology that it is a new field of effort. It was practised centuries ago. In early records are described the cutting of a fistula and the ligature operation for hemorrhoids. While, therefore, technic offers no novelties, physiologic surgery affords a most promising field for the further development of proctology.

The observations of the ancients were remarkably accurate, and, considering the limited amount of detailed knowledge at their command, are as wonderful examples of the power of human induction as many of the best conclusions of the modern day. Consider, for example, their decision that a hemorrhoidal flux was in some cases to be regarded as beneficent. Whether or not the cause was known as we understand it today, to be hepatic cirrhosis or right heart engorgement, still, for all, the observation is based upon as sound philosophy as could possibly be adduced today.

It is well for us, in the occasional mental stock-taking (which is periodically forced upon us) to bear in mind that the tendency of modern scientific instruments of precision, together with all the wonderful array of laboratory tests, while of indisputable value, are, in a certain sense, of greater value to the patient than to the physician, for they certainly tend to take from the latter the necessity for that keenness of perception and correlative interpretation of symptoms, which was the distinguishing characteristic of the earlier physicians, whose chief reliance was their own mental activity.

REPORT OF A CASE OF IDIOSYNCRASY TO QUININE AND UREA HYDROCHLORIDE.

By Collier F. Martin, M.D., Philadelphia, Pa.

(Abstract.)

Martin reports a case of toxic symptoms appearing in a patient from an injection of 3 m. of a 10% solution of quinine and urea hydrochloride. The symptoms complained of by the patient were swelling of the hands and feet, and numbness of the extremities. For a few hours there was some difficulty in respiration, associated with a tendency to fainting and some nervous perturbation. Later there developed an urticarial rash, covering the entire body, associated with intense itching. The attack subsided in about two days, leaving the patient with no alarming symptoms. The patient has had two previous experiences, and certainly should have informed her physician of her susceptibility. The case is cited simply to note one of the complications which may occur when using this drug.

THE NON-SURGICAL TREATMENT OF SPLANCHNOPTOSIS.

By Rolla Camden, M.D., Parkersburg, W. Va.

(Abstract.)

Without going deeply into the etiology, pathology, and symptoms and diagnosis of splanchnoptosis, attention is called to the necessity for treatment first along conservative lines of medicinal, personal and mechanical aids in this condition, rather than the surgical treatment usually offered.

Normally, the viscera are held in place by their respective supports, and intra-abdominal pressure, these being aided by proper poise of the body.

In splanchnoptosis the poise is bad, with the resulting loss of intra-abdominal pressure and of supporting visceral attachments.

Splanchnoptosis, divided into simple and complex: simple when there are no restraining adhesions and the organs are returnable to their normal positions; complex (extravisceral), when they are retained out of place by adhesions, and are not, therefore, returnable to their normal places.

Our endeavor should be to restore viscera to their normal places and maintain them there. This is to be accomplished by personal efforts of the patient by correction of posture, certain abdominal exercises, massage, vibration, and hydrotherapy, and medical treatment as indicated after gastric and enteric analyses.

Other means are external or mechanical, such as shoulder braces, abdominal supports, corsets, etc., *modified to suit the patient* and raising foot of the bed.

Attention is called to the difficulty of obtaining proper and constant support to thin individuals with small abdomens and prominent hip-bones, with suggestions for modifying the usual mechanical aids offered.

NEGLECTED RECTAL EXAMINATIONS.

By James A. McVeigh, M.D., Detroit, Mich.

(Abstract.)

A thorough rectal examination is a source of comfort to the patient and satisfaction to the doctor. It enables the latter to make a correct diagnosis and advise proper treatment.

Rectal examinations are not difficult, and should be ocular, digital, and instrumental. The physician should never accept the patient's diagnosis. This is not infrequently done, and such an unscientific procedure is usually productive of unsatisfactory result.

Indifference and carelessness on the part of members of the medical profession in conducting rectal examinations are being rapidly lessened, owing largely to the influence of the American Proctologic Society. The remedy lies in persistently reminding the men engaged in general practice of the necessity of making thorough rectal examinations whenever indicated, and the men who are following this special line of work are the ones who must be most active in conducting this campaign of education.

Book Reviews.

The Healthy Girl. By Mrs. Joseph Cunning, M.B., Lond., and A. Campbell, B.A. London: Henry Frowde and Hodder and Stoughton.

This volume is intended as a manual of personal hygiene for school girls, and is well written, at once from the scientific and popular standpoint. It is divided into a series of chapters dealing with various bodily functions, and is illustrated by a series of twenty-one text cuts. It should be a useful guide to place in the hands of girls at the proper age.

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ERNEST GREGORY, *Manager*,
126 Massachusetts Ave., Corner Boylston St., Boston, Massachusetts.

THE MAN WHO STAYED AT HOME.

A RECENT popular melodrama which has met with well-deserved success at a local theatre describes the difficulties of a certain man whose duties demanded that he stay at home and assume the rôle of a slacker in order to do his share for his country. His position was a difficult and at times a painful one. He was misunderstood and abused. We all welcomed the last act which showed this man in his true light and made him the hero of the play.

A situation somewhat analogous to this exists in the medical profession of this country at the present time. A large number of physicians have been fortunate enough, and we use the term "fortunate" advisedly, to come within the draft age or to have already joined the Medical Reserve Corps or to be so situated that they have been able to offer their services to the Army and Navy or elsewhere. We have each of us attended functions to honor these men on their departure to France to represent us in this great war. We have sung and laughed and presented gifts on such occasions, while each of us has sincerely envied our more fortunate brothers in uniform. While neither our friends overseas, who apparently are enjoying their hard work and new, though perhaps rough, experiences, nor we who stay at home with increasing burdens medical and financial, and decreasing supplies of sugar and coal, need any sympathy, there is a certain group of physicians who do need sympathy and encouragement. We refer to the superintendents and physicians of the sanatoria for consumptives, institutions for the insane and others in Massachusetts. The life of these men is, at the best, none too pleasant. They and their families live in an atmosphere of ill health and disease—physical or mental. The compensation they receive is inadequate, to say the least. They are only too often harassed and badgered by legislative committees, commissions to investigate and report, and so-called bureaus of efficiency and economy, whose knowledge of the conditions they so freely criticize is far too often a superficial and inadequate one. These men have lost many of their best and most efficient assistants and helpers, who have entered the Army or who have accepted more remunerative and pleasanter situations elsewhere. In the Massachusetts sanatoria for tuberculosis we are glad to note that, despite the pressure brought to bear, none of the superintendents has handed in his resignation. The same may be said of the State institutions for the insane, and in fact practically all of our State institutions. At some of our largest State asylums, normally having a staff of ten to twelve physicians, there are only three or four physicians left to do the work. In addition to this extra work thrown upon their shoulders by the decreased force at the institutions themselves, many of these men are serving on committees for reconstruction work and other war activities. The work that these men are doing in keeping these institutions up to the highest possible standard is exactly as important as the work of their more fortunate brothers overseas. It is absolutely essential that our campaign against consumption, for instance, should be continued at the very highest possible efficiency, so that when the time comes we can make provision and have the adequate machinery in operation and running smoothly to care for tuberculous soldiers from overseas.

This is the work that these superintendents are doing. They have stuck by their posts. They have assumed increasing burdens, and are cheerfully and quietly doing the duty that lies nearest to them, and are doing it well. They do not wear uniforms, nor do they seek nor receive recognition. They are the men who are staying at home, as did the man in the play. Let us hope that, sooner or later, the important service that they are doing for their country will receive the recognition it deserves.

WAR-RISK INSURANCE.

IN recent previous issues of the JOURNAL we have commented editorially from time to time on the Government plan of war-risk insurance. There has been some uncertainty in this connection with reference to the question whether such insurance was intended to cover partial as well as total disability. The following letter from Colonel Straub to Dr. George W. Gay of this city, would seem to clear up the matter and settle it finally.

"Headquarters Northeastern Department,
Department Surgeon's Office,
25 Huntington Avenue, Boston.
February 4, 1918.

My dear Dr. Gay:

In the letter regarding insurance that I sent you on January 24, there seemed to be a discrepancy between the information that I gave you, and that which you had received from the Deputy Commissioner of Customs. This discrepancy is to be explained as follows:

Insurance of two sorts is provided by the United States Government for its soldiers who die or who are disabled. One kind of insurance is called 'compensation,' and practically replaces the former pension system; the other sort is called 'war-risk insurance.'

This 'compensation' is payable to the beneficiary, for the death of the soldier, or to the soldier for partial or total disability; it is automatic in its operation, since the soldier receives the benefits of compensation, without action on his part. This was the type of insurance for partial disability that I referred to in my letter of January 24 to you.

The war-risk type of insurance is taken out by the soldier himself for such amount as he chooses up to $10,000. The opportunity to apply for this form of insurance expires within 120 days of entry into active service. This 'voluntary' insurance is payable only for death or total disability.

The two types of insurance described above—one automatic, and called 'compensation,' and one voluntary—are entirely distinct, separate, and supplementary to each other. That is, the monthly payment under the 'compensation' to the soldier who is permanently disabled, is in addition to any payment which he may or may not have provided for himself by taking out voluntary war-risk insurance.

P. T. STRAUB,
Colonel, Medical Corps, U. S. A."

PNEUMONIA.

AT a time when pneumonia is the chief cause of death in our armies at home and in the field, and when it is also particularly prevalent among our civil population, there is peculiar timeliness in the two leading articles of this week's issue of the JOURNAL. The paper by Dr. Shattuck and Dr. Lawrence summarizes the experience of the Massachusetts General Hospital in the treatment of this disease during the period from 1889 to 1917, and is a sequel to a similar paper by Drs. Coolidge and Townsend, published in 1889 and abstracted in the JOURNAL of June 27, 1889 (Vol. cxx, p. 643). Dr. Leen's paper is a study of strains of pneumococci, and of the serological treatment appropriate to different strains. The attention of physicians is directed to these two articles and to the progress which they connote in the knowledge and treatment of pneumonia.

MEDICAL NOTES.

WAR NOTES.

DEATH RATE IN GERMANY.—The *Maasbode*, an Amsterdam daily, publishes a report of death rates in Germany from its Berlin correspondent. From the beginning of the war up to the end of 1916 there were over a million more deaths in Germany than is normally the case.

"For the first three years, the entire loss by mortality is said to have been 3,700,000. Thus instead of the normal increase of 2,400,000 there was on August 1, 1917, a decrease of 600,000 to which another 700,000 was added as a result of the decline in birth figures that still continues. The absolute decrease in the population after three years, therefore, would have been 2% of the number at the beginning of the war.

Other phenomena are to be expected for the near future. Instead of 14,000,000 the men between the ages of 17 and 45 will number only 12,700,000; and instead of 800,000, as now, the excess of women over men will be 2,100,000. It is not yet known how the war losses will be spread over the various ages, but it looks as if there will be 1100 women to every 1000 men of marriageable age. For these reasons, and in view of the fact that there will be a large number of invalids among the men, the marriage chances must be termed greatly reduced,—a fact which will in its turn produce further shiftings on the labor market, that on their part will again react on the population movement.

The war is not regarded—at any rate by experts—as harmful to infants. Natural feeding is far more general than formerly in all classes of population, and the results are good, as the food authorities apportion to the mother the food for the child, as, for example, 1 litre of milk per day. Infants have a right to 1 litre of milk daily, 50 grammes of sugar, and 200 grammes of flour a week and 1 pound of oatmeal a month, and can do well on that.

The food question becomes more difficult in the child's second year, as vegetables and fruits are scarce, at any rate in the large towns, so that the potato has to take the place of these. The counsel is now heard more frequently to restrict gymnastic exercises and, following the example of the marmots, to substitute the food that is lacking by sleep, and to see that the children get long nights of sleep."

WAR RELIEF FUNDS.—Following a period of relative recent inactivity, the sponsors of the New England Belgian Relief Fund have issued a new appeal for funds to continue the work of relieving destitution among Belgians, wheresoever dispersed. This work will continue in charge of Mr. Hoover. In issuing this fourth annual appeal Mr. John S. Codman, manager of the fund, points out that changed conditions regarding shipping give opportunity for larger shipments to the Belgians, and submits the following summary of the fund's financial operations from October, 1914, to December, 1917, inclusive (three years and three months):

RECEIPTS.		
Contributions		$660,112.31
Interest		2,946.03
Total		$663,058.34
DISBURSEMENTS.		
Expended for relief—		
Food and clothing	$343,805.16	
Cash distribution	246,167.95	
		$589,973.11
Expense of collection and administration of funds		37,293.09
Cash in hands of treasurer, Jan. 1, 1918	$27,768.10	
Advanced to headquarters and covered by assets there (see note)	8,024.04	
		35,792.14
Total		$663,058.34

Note—Assets at headquarters on Jan. 1, 1918, as listed by the auditors, were as follows:

Cash on hand	$8,132.14
Inventory	9,280.30
Equipment	400.00
Accounts receivable	1,640.45
Insurance unexpired	49.87
	$19,502.76
Accounts payable	1,525.94
	$17,976.82

The New England Belgian Relief Fund, unlike many other relief organizations, has no special fund contributed to cover the necessary expenses of collection and administration. The figures above include all cash contributions and all disbursements for expense, such as advertising and other publicity, and managerial and clerical expense connected with the collection of money and its expenditure for relief purposes. It will be noted that the total expense is $37,293.09, as compared with total receipts amounting to $663,058.34, or less than six cents out of every dollar contributed.

On February 7, the totals of the principal New England War Relief Funds reached the following amounts:

Belgian Fund	$638,468.14
Armenian-Syrian Fund	278,875.37
Polish Fund	96,387.73

HEALTH CONDITIONS AT ARMY CAMPS.—The Surgeon-General reports that for the week ended February 1 that there is a slight decrease in deaths from pneumonia. The total number of deaths was 178, pneumonia being responsible for 117 of these. The Regular Army, as usual, had the lowest death rate, with 29. There were 69 deaths in the National Guard and 87 in the National Army.

BOSTON AND MASSACHUSETTS.

WEEK'S DEATH RATE IN BOSTON.—During the week ending Feb. 9, 1918, the number of deaths reported was 312, against 290 last year, with a rate of 20.78, against 19.58 last year. There were 43 deaths under one year of age, against 42 last year.

The number of cases of principal reportable diseases were: diphtheria, 92; scarlet fever, 56; measles, 125; whooping cough, 62; typhoid fever, 2; tuberculosis, 54.

Included in the above were the following cases of non-residents: diphtheria, 12; scarlet fever, 9; measles, 2; tuberculosis, 5.

Total deaths from these diseases were: diphtheria, 6; scarlet fever, 2; measles, 1; whooping cough, 5; typhoid fever, 1; tuberculosis, 23.

Included in the above were the following non-residents: diphtheria, 4; measles, 1; tuberculosis, 2.

APPOINTMENT OF DR. MCBAIN.—Dr. William H. McBain of Malden has been appointed city bacteriologist and physician in charge of the Malden contagious hospital. He succeeds Dr. C. H. Staples, who has resigned.

RESIGNATION OF DR. ALLAN MCLAUGHLIN.—Dr. Allan J. McLaughlin, health commissioner of Massachusetts, has been recalled to Washington by federal authorities. He will become assistant surgeon-general in the public health service of the United States. As second in command he will have control of all the domestic health work in the United States, particularly with respect to the military cantonment areas. An appreciation of Dr. McLaughlin's work since he has been in this state appears in the daily press.

"Those who follow the cause of public health and sanitation in Massachusetts will regret to learn that our State commissioner of health, Dr. McLaughlin, has tendered to Governor McCall his resignation. Four years ago the State House was the scene of legislative turmoil over a proposed reorganization of the State Board of Health, which for more than a quarter of a century had faithfully served the State and won for it the highest place among all similar boards in America. Much ignorant and ill-timed criticism found vent, and eventually a new form of organization was enacted similar to one which had recently been successfully inaugurated in the State of New York. A Department of Health took the place of the old unpaid Board, headed by a paid commissioner and a Public Health Council. With commendable painstaking and wisdom Governor Walsh chose for the new and trying position Dr. Allan J. McLaughlin of the United States Public Health Service, who had won his spurs by service in the Philippines, in Europe and in America.

From the outset Dr. McLaughlin showed great sagacity and a fine appreciation of the Massachusetts spirit. He surrounded himself by a council of sanitary leaders wisely selected, to whose opinions and advice he has always been ready to listen. He retained as the heads of such departments as sanitary engineering, food and drug inspection and chemistry the experienced workers of the old board. He has never played politics. He has inaugurated new methods of appointment of district health officers, new methods of dealing with old diseases, new methods of public health education. In short, he has kept the standard high and has maintained the best traditions of State service to the public health, for which Massachusetts has long been famous. And now he returns to the United States Public Health Service, by which he had only been lent to Massachusetts, in answer to an imperative call to duty at the office of that service in Washington. The care of the civilian population is second only in importance to that of the Army and Navy, and war conditions have put so many new and heavy burdens on the Federal Public Health Service that its surgeon-general has summoned Dr. McLaughlin to his immediate personal staff for active duty. He will take with him the respect and gratitude of the people of Massachusetts for his faithful and honorable service to the Commonwealth. His resignation also lays upon the governor a heavy burden in the choice of a worthy successor."

THE NORFOLK DISTRICT MEDICAL SOCIETY.—A regular meeting of the Society will be held at the Homeopathic Hospital, Evans Memorial Building, 80 E. Concord Street, Tuesday, Feb. 26, at 7 p.m. sharp. The program is as follows: Inspection of the hospital; Business; Communications; "The Venereal Problem—The State Department of Health Viewpoint," M. E. Champion, M.D., State Dept. of Health; "The Venereal Problem—The Army Viewpoint," Lieut. E. M. McKee, S.C.N.A.; "The Venereal Problem—The Navy Viewpoint," Lieut. H. P. Stevens, M.D., U.S.N.R.

The Massachusetts Medical Society.

STATED MEETING OF THE COUNCIL.

A STATED meeting of the Council of the Massachusetts Medical Society was held in John Ware Hall, Boston Medical Library, Wednesday, February 6, 1918, at 12 o'clock, noon. The President, Dr. Samuel B. Woodward, was in the chair and the following 67 Councilors present:

BARNSTABLE,
C. W. Milliken.
BRISTOL SOUTH,
E. F. Curry.
ESSEX NORTH,
T. R. Healy.
R. V. Baketel.
E. H. Noyes.
J. J. O'Sullivan.
ESSEX SOUTH,
R. E. Bicknell.
H. K. Foster.
HAMPDEN,
E. P. Bagg, Jr.
R. A. Greene.
E. A Knowlton.
MIDDLESEX EAST,
E. S. Jack.
MIDDLESEX NORTH,
W. B. Jackson.
E. G. Livingston.
M. A. Tighe.
MIDDLESEX SOUTH,
H. T. Baldwin.
F. E. Bateman.
E. H. Bigelow.
C. H. Cook.
A. W. Dudley.
Edward Mellus.
C. E. Mongan.
E. H. Stevens.
F. R. Stubbs.
Julia Tolman.
G. W. Whiting.
Alfred Worcester.
J. H. Young.
NORFOLK,
E. H. Brigham.
H. W. Dana.
C. B. Faunce.
T. F. Greene.
R. W. Hastings.
Bradford Kent.
T. J. Murphy.
J. W. Pratt.
S. H. Rubin.
Victor Safford.
R. D. Schmidt.
H. F. R. Watts.
PLYMOUTH,
Gilman Osgood.
A. E. Paine.
SUFFOLK,
H. F. Vickery.
E. S. Boland.
G. W. W. Brewster.
W. L. Burrage.
E. A. Codman.
J. A. Cogan.
F. J. Cotton.
G. A. Craigin.
E. G. Cutler.
R. L. DeNormandie.
Albert Ehrenfried.
C. M. Green.
J. L. Morse.
Anna G. Richardson.
G. G. Smith.
R. M. Smith.
A. K. Stone.
F. B. Talbot.
D. H. Walker.
WORCESTER,
R. W. Greene.
David Harrower.
A. G. Hurd.
G. O. Ward.
S. B. Woodward.
WORCESTER NORTH,
J. G. Henry.

The records of the last meeting were read and accepted.

Dr. Charles M. Green presented the following report of the Committee on Membership and Finance as regards membership, and it was accepted and its recommendations adopted.

REPORT OF THE COMMITTEE ON MEMBERSHIP AND FINANCE AS TO MEMBERSHIP.

The Committee on Membership and Finance makes the following recommendations as to membership:

1. That the following named Fellows be allowed to retire, under the provisions of Chapter I, Section 5, of the by-laws:

Jesse Howes Averill, of Campello, Brockton.
Joseph Ward Battershall, of Attleborough.
John Shanahan, of Peabody, with remission of dues to the amount of $10.
Samuel Finley Smith, of Indian Orchard, Springfield.

2. That the following named Fellows be allowed to resign, under the provisions of Chapter 1, Section 7, of the by-laws:

Francis Gilman Blake, of Minneapolis.
Herbert Rutherford Brown, of Rochester, N. Y., with remission of dues to the amount of $5.
William Sohier Bryant, of New York.
Herbert Huskisson Cornforth, of Fitchburg.
Henning Vitalis Hendricks, of Traverse City, Michigan.
Nellie Louise Lawrence, of Louisville, Kentucky
John Alfred Parsons Millet, of Buffalo, N. Y., with remission of dues to the amount of $5.
Isaiah Lovell Pickard, of Concord Junction, with remission of dues to the amount of $5.

3. That the following named Fellows be allowed to change their district membership, without change of legal residence, under the provisions of Chapter III, Section 3, of the by-laws:

Carleton Eugene Allard, from Suffolk to Norfolk,
Louis Adalore Oliver Goddu, from Norfolk to Suffolk.
Robert Battey Greenough, from Norfolk to Suffolk.

For the Committee on Membership and Finance,
CHARLES M. GREEN, *Chairman.*

The petition of W. J. Brickley to be restored to the privileges of fellowship was acted on favorably. As a Committee to consider the petition of J. T. L. Brennan for restoration to the privileges of fellowship, the Chair nominated and the Council appointed: Leonard Huntress, J. B. O'Connor, J. P. McAdams; and for a similar petition from J. E. Clark: E. L. Young, Jr., J. D. Barney, E. R. Kelley.

On nomination by the President the Council appointed the following delegates:

To House of Delegates American Medical Association, for two years from June 1.
Principals: J. B. Blake, H. G. Stetson, L. F. Woodward.
Alternates: G. Osgood, L. A. Jones, J. F. Burnham.

To Annual Meetings of state medical societies:

Maine: C. W. Harlow, D. C. Dennett.
New Hampshire: D. N. Blakely, A. A. Taft.
Connecticut: C. L. Scudder, E. A. Bates.
Rhode Island: D. Harrower, J. H. Davenport.

The Treasurer read his report for the year 1917. Dr. Ray W. Greene read the report of the Auditor, including a letter of the certified public accountant. *Voted*, To accept the reports as read.

Dr. Charles M. Green, for the Committee on Membership and Finance, presented a budget and two motions. He explained that the Society had no longer a balance in the treasury; that foreseeing that there might be a deficit, his Committee had recommended a year ago that ten thousand dollars of the balance be placed in the permanent fund, and that by the action of the Council, five thousand dollars of this had been so invested; that for the previous year the excess of expenditure over the budget had been about twenty-seven hundred dollars. He urged the Society to live within its income, and the Committee had submitted a budget which he thought would accomplish that purpose. He pointed out there were three alternatives as to the disposal of the balance of twenty-five hundred dollars in the treasury: that (*a*) it should remain in the treasury; (*b*) be a dividend to district societies, or (*c*) be used for the annual dinner. On motion by Dr. Bateman the budget was accepted by vote.

Dr. Bateman submitted the Committee's motion, No. 1, amended by adding the following words at the end, "if requested." Motion: "That members of the Massachusetts Medical Society in active military or naval service of the United States Government, or of its allies, be exempted from the payment of annual assessments during the present war." The amendment was lost and the original motion was passed.

The questions of having an annual dinner and of how the annual dues should be remitted were discussed by Dr. Ward, Dr. Jack, Dr. Worcester, Dr. Bateman, Dr. Stone, and Dr. Green. Dr. Bateman *Moved,* That the dues that have already been paid for the current year be returned on request. This motion appeared to be lost by a voice vote, but when the vote was doubted, it was carried by a standing vote of 34 in favor and 15 opposed. On motion by Dr. Ward, it was *Voted,* That $2500 be distributed *pro rata* to the district societies as a dividend, as in previous years, the annual dinner being omitted in 1918. By a standing vote, 33 were in favor and 19 opposed, and the motion was carried.

Dr. Green presented motion No. 2: "That the several district societies be urged to take measures to provide money wherewith to pay to the Massachusetts Medical Sociey the remitted dues of their members in active military or naval service, to the end that the activities of the Society may not be seriously curtailed," and it was passed unanimously.

Dr. J. H. Young for the Committee of Arrangements said that his Committee had prepared a tentative program for the annual meeting, but that in view of the votes of the Council, just passed, he would not read it, but he would like to have the day of the meeting definitely determined. On motion by Dr. J. L. Morse it was voted that the meeting be held on June 18 and 19. Dr. Mellus moved that the Committee of Arrangements be requested to arrange for a dinner to be paid for by those who attended it, and Dr. Stevens suggested that a postal card vote would show the number of Fellows who would attend such a dinner. The motion being put, was lost.

On nomination by the President, Drs. E. H. Stevens of Cambridge and A. R. Crandell of Taunton were elected to fill vacancies in the Committee on State and National Legislation caused by the resignations of Drs. W. H. Robey and J. S. Stone. The President read obituaries of ex-President Silas Dean Presbrey and Councilor John Quincy Adams.

The President spoke of the work being done by the State Department of Health to protect the community from venereal diseases. He said that the Department now has a bill before the Legislature for the establishments of clinics in venereal diseases, and asking for an appropriation of $15,000. The Department now feels that it needs $10,000 more in order to establish properly these clinics, and it would ble glad to have the support of the Massachusetts Medical Society in furthering the bill before the Legislature. The President asked for the privileges of the floor for Dr. C. Morton Smith, and they were so voted. Dr. Smith said that the attitude of the public and of the profession toward venereal diseases had changed in recent times. At this time the profession should act in unison to favor a propaganda for the further abatement of venereal diseases. The State Department of Health has formulated a program of: (*a*) venereal disease reporting; (*b*) extension of facilities for making diagnosis and early treatment; (*c*) repressive measures; (*d*) education of the laity, especially young adults, as to what they should know. He thought a committee could be formed to work with the State Department of Health in the furtherance of these objects, and he moved that a committee of five be appointed by the President to consider the question of the prevention and cure of venereal diseases, and it was so voted. The President appointed this committee: Drs. C. Morton Smith, Paul Thorndike, F. H. Baker, W. C. Quinby, and Nelson C. Haskell.

Dr. A. K. Stone read the following report of progress of the Committee on Health Insurance, and asked for an appropriation of $100 for this Committee:

The Committee on Health Insurance has attended hearings and has caused to be made stenographic notes, many of which have been published in THE BOSTON MEDICAL AND SURGICAL JOURNAL, showing the general temper of the hearings. The Massachusetts Commission on Social Insurance reported to the Legislature against social insurance and in favor of the extension of health work in the State. The Committee had hoped to be discharged, but House Bill 642 has been introduced and the Committee will have to remain active until the June meeting of the Society. All are notified that the hearing on this bill on Industrial Insurance will be held February 27, at 7 p.m.

The report was accepted, and the request was referred to the Committee on Membership and Finance, which receives, under the By-Laws, all requests for extraordinary appropriations.

Dr. Mongan presented the following preamble and resolution, and it was passed:

"*Whereas,* Recognizing the important rôle that food will play in winning the war for the Allies, and appreciating the greatness of the task which the Food Administration has assumed,

"*Be It Resolved,* That we, the Council of the Massachusetts Medical Society, most urgently appeal to the members of our society to use every effort as a society and individually to bring home to the people of Massachusetts the grave necessity of conserving food."

Adjourned at 1.52 p.m.

WALTER L. BURRAGE,
Secretary.

TREASURER'S REPORT.

STATEMENT SHOWING THE ASSETS AND LIABILITIES OF THE MASSACHUSETTS MEDICAL SOCIETY DECEMBER 31, 1917.

Schedule A

ASSETS.		
Cash		
New England Trust Co.	$1,054.14	
Old Colony Trust Co.	3,140.14	$4,194.28
Investments		
Shattuck Fund		
Annuity Policy Mass. Hosp. Life Ins. Co.	9,166.87	
Phillips Fund		
Mass. 3½% Gold Bonds	10,000.00	
Cotting Fund		
Deposit in Institution for Savings in Roxbury and Vicinity	1,000.00	
Deposit in Provident Institution for Savings in the Town of Boston	1,000.00	
Deposit in Suffolk Savings Bank for Seamen and Others, Boston	1,000.00	
Fund for Professorship of Military Medicine		
Liberty Bonds—Second Issue 4%	300.00	
Permanent Fund		
Annuity Policy of Mass. Hosp. Life Ins. Co.	11,253.30	
Mass. 3½% Gold Bonds	6,000.00	
Deposit in Franklin Savings Bank of the City of Boston	1,074.48	
Liberty Bonds—First Issue 3½%	5,000.00	$45,794.65
Total		$49,988.93

LIABILITIES.		
Endowment Funds		
Shattuck Fund (G. C. Shattuck. 1854. Balance, 1866)	$9,166.87	
Phillips Fund (Jonathan Phillips, 1860)	10,000.00	
Cotting Fund (B. E. Cotting, $1000, 1876, 1881, 1887.)	3,000.00	
Emmons and Associates Fund	589.71	
Fund for Professorship of Military Medicine	300.00	$23,056.58
Surplus		
Balance January 1, 1917	23,204.58	
Deficit for the year *Schedule B*	3,727.77	26,932.35
Total		$49,988.93

STATEMENT SHOWING THE PROFIT AND LOSS ACCOUNT OF THE MASSACHUSETTS MEDICAL SOCIETY FOR THE YEAR ENDING DECEMBER 31, 1917.

Schedule B

CREDIT.		
Dues paid to District Treasurers		
Barnstable	$155.00	
Berkshire	380.00	
Bristol North	315.00	
Bristol South	695.00	
Essex North	820.00	
Essex South	1,035.00	
Franklin	185.00	
Hampden	1,160.00	
Hampshire	295.00	
Middlesex East	340.00	
Middlesex North	559.00	
Middlesex South	2,260.00	
Norfolk	2,504.00	
Norfolk South	285.00	
Plymouth	495.00	
Suffolk	3,355.00	
Worcester	1,325.00	
Worcester North	430.00	$16,593.00
Dues paid to Treasurer		819.00
Dinner tickets		687.00
Income Shattuck Fund (Income not collected)		
Income Phillips Fund		
Massachusetts 3% Bonds		350.00
Income Cotting Fund		
Interest Institution for Savings in Roxbury and Vicinity (not collected)		
Interest Provident Institution for Savings (not collected)		
Interest Suffolk Savings Bank (not collected)		
Carried forward		$18,449.00

Brought forward			$18,449.00
Income Permanent Fund			
Annuity policy Mass. Hosp. Life Ins. Co. (not collected)			
Massachusetts 3½% Bonds		$210.00	
Interest Franklin Savings Bank (not collected)			
Liberty Bonds 3½% First Issue		88.47	298.47
Emmons and Associates Fund			
Donations for salary and expenses of Society's agent			1,373.21
Homeopathic Medical Society			
Donation for Workmen's Compensation Committee			200.00
Income from Deposit in Banks			
New England Trust Co.		171.20	
Old Colony Trust Co.		131.31	302.51
Total			$20,623.19

	DEBIT.		
General Expense			
President's expense	$115.76		
Secretary's expense	445.70		
Treasurer's expense	150.50		
Librarian's expense	64.23		
District Treasurer's expense	1,329.74		
Supervisors' expense	29.38		
Censors' expense	313.50		
Rent	750.00		
Salaries	1,605.00		
Delegates' expense	27.12	$4,830.93	
Boston Medical and Surgical Journal			
Guarantee	9,479.25		
Editor's salary	300.00		
Total	9,779.25		
Less rebate for the year 1916	500.00	9,279.25	
Committee expense			
Arrangements	2,900.53		
Membership and Finance	4.95		
Ethics and Discipline	5.64		
State and National Legislation	118.41		
Public Health	174.33		
Workmen's Compensation	1,793.99		
Health Insurance	127.72	5,125.57	
Annual Dividend to District Societies		2,500.00	
Defence of malpractice suits		1,107.65	
Cotting Fund		134.35	
Emmons and Associates Fund			
Salary and expense of Society's agent		1,373.21	$24,350.96
Deficit for the year			$3,727.77

ARTHUR K. STONE,
Treasurer.

AUDITOR'S REPORT.

In the absence of my auditor colleague, Dr. Ayer, I have made an examination of the books of the Treasurer of the Massachusetts Medical Society, with the aid of a certified public accountant who reports as follows:

Boston, February 1, 1918.

Dr. R. W. Greene,
Auditor, Massachusetts Medical Society,
21 West St., Worcester, Mass.

Dear sir :—

In accordance with your instructions I have audited the books and accounts of the Massachusetts Medical Society for the year ending December 31, 1917, and enclose herewith

Schedule A Statement Showing the Assets and Liabilities of the Massachusetts Medical Society, December 31, 1917.

Schedule B Statement Showing the Profit and Loss Account of the Massachusetts Medical Society for the year ending December 31, 1917.

The cash on deposit in the banks has been reconciled with the bank accounts and found to be correct. The disbursements have been properly verified, and all known cash receipts during the year have been properly credited on the books.

Income from the Shattuck Fund, invested in an annuity policy in the Massachusetts Hospital Life Insurance Company, income from the Cotting Fund, deposited in the Institution for Savings in Roxbury and Vicinity and the Suffolk Savings Bank for Seamen and Others, and income from the Permanent Fund, invested in an annuity policy in the Massachusetts Hospital Life Insurance Company, and deposited in the Franklin Savings Bank of the City of Boston, were not received until after January 1, 1918, and will be treated as income for the year 1918.

I have not examined any of the securities belonging to the Society.

Yours very truly,
HORACE C. HARTSHORN,
Certified Public Accountant.

On January 31st, 1918, I personally examined the securities belonging to the Society and found them all, as listed on the books of the Treasurer, in a safe deposit box of the Old Colony Trust Co.

Respectfully submitted,
Worcester, Feb. 6, 1918. RAY W. GREENE, *Auditor.*

BUDGET.

The Committee on Membership and Finance submits and recommends the adoption of the following budget for the fiscal year 1918:

Income		
Estimate of the Treasurer		$18,745
Appropriations		
Salaries of officers:		
Secretary	$800	
Treasurer	500	
Librarian	400	
Editor	300	
Official expenses of officers:		
President	100	
Secretary	600	
Treasurer	140	
Librarian	60	
District Treasurers	1,200	
Censors	320	
Supervisors	30	
Delegates to meeting of A. M. A...	100	
Rent of accommodations at the Medical Library	750	
Boston Medical and Surgical Journal (appropriated in October)	9,000	
Defense of malpractice suits	600	
Shattuck Lecture	200	
Cotting Lunches	200	
Standing Committees:		
Committee of Arrangements (annual meeting)	500	
Membership and Finance	5	
Ethics and Discipline	25	
Medical Education and Medical Diplomas	25	
State and National Legislation ...	250	
Public Health	75	
Contingent expenses	65	
		16,245
Balance { to remain in treasury, or for dividend to District Societies or for annual dinner		2,500
		$18,745

The Committee recommends the passage of the following motions:

1. That members of the Massachusetts Medical Society in active military or naval service of the United States Government, or of its Allies, be exempted from the payment of annual assessments during the present war.

2. That the several District Societies be urged to take measures to provide money wherewith to pay the Massachusetts Medical Society the remitted dues of their members in active military or naval service, to the end that the activities of the Society may not be seriously curtailed.

For the Committee on Membership and Finance,

CHARLES M. GREEN, *Chairman.*

Obituary.

WILLIAM HENRY LATHROP, M.D.

DR. WILLIAM HENRY LATHROP died at his home in Lowell, December 22, 1917, at the age of 77. He was a graduate of the University of Pennsylvania medical department, in the class of 1865, having served previously as acting assistant surgeon in the United States Army. He became editor of the *Detroit Review of Medicine and Pharmacy* the year of his graduation and held the position until 1873; then he served three years as physician to the Detroit Retreat for the Insane, moving to Lowell in 1876 and joining the Massachusetts Medical Society From 1892 to 1900, he was a member of the Lowell School Board.

CHARLES DEXTER SAWIN, M.D.

DR. CHARLES DEXTER SAWIN of Winter Hill, Somerville, died at the Relief Hospital, Boston, February 8, 1918.

Dr. Sawin was born in Charlestown, June 10, 1857, graduated S.B. from the Massachusetts Institute of Technology in 1878 and from the Harvard Medical School in 1883. Then he served as house officer at the Boston City Hospital, becoming physician to the State Prison in 1884, and serving there until 1891. He did much work in accident cases of a medico-legal character. In 1907 he moved to Somerville. In 1885 he married Katherine F. Cole of Charlestown, who died two years later, and in 1893 he married Mabel A. Beattie, of Lancaster, N. H.

He was a Fellow of the Massachusetts Medical Society, and a member of the Boston Medical Library.

HORATIO FRANKLIN COPELAND, M.D.

DR. HORATIO FRANKLIN COPELAND, a retired Fellow of the Massachusetts Medical Society, died at his home in Whitman February 8, 1918, of cerebral hemorrhage.

He was born in Easton, November 15, 1842, and graduated from Harvard Medical School in 1865, serving then as U. S. Assistant Surgeon at the smallpox hospital at Bermuda Hundred. He joined the Massachusetts Medical Society in 1878 and settled in general practice at Whitman. He was a member of the American Medical Association.

RECENT DEATHS.

DR. W. B. BUELL of San Francisco was shot and killed in his office by Felice Prato, former sergeant in the Italian Army. Dr. Buell was chief surgeon of the Union Iron Works Hospital. No motive is known for the crime.

DR. CARROLL G. VERRETT, formerly of Boston, died recently at his home in Norfolk, Va. Dr. Verrett's son, Dr. William Verrett, died in France last June while serving with the Harvard Medical Unit. Dr. Verrett is survived by his widow, four daughters and five sons.

CHARLES SEYMOUR BRADLEY, M.D., died suddenly of heart disease, January 10, 1918, at his home, 71 Walnut Ave., Roxbury. He was born in Newtown, Conn., October 6, 1853, receiving his degree of M.D. from the University of New York in 1873. He settled first in Westboro, Mass., where he practised for 18 years, joining the Massachusetts Medical Society in 1883. He was married in 1878 and is survived by his widow.